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ABSTRACT

Suggested vocational-technical education programs for the Monroe County Florida school system are presented along with recommendations to implement the principle of coordinated career education in the public schools. Expansion of vocational-technical programs is emphasized to expose all students from kindergarten through Grade 12 to career education opportunities. The economy of the State and manpower projections are discussed, with particular attention to conditions in the Florida Keys, the area of Monroe County. The Keys' unique physical setting provides easy living but its human resources are ill-trained and unprepared for the future. To obtain information on the area's educational and manpower needs, surveys were conducted of residents, businesses, educators, and former vocational students. As a result of the total study, a comprehensive career education program from kindergarten through Grade 14 was recommended, with programs through Grade 5 to create an awareness of work, in Grades 6-8 to provide exploration of work possibilities, in Grades 9-12 for preparatory job training vocational-technical courses, and with postsecondary technical training at the Florida Keys Community College, a vocational center. Appended are general economic data and survey forms used in the study. (MF)

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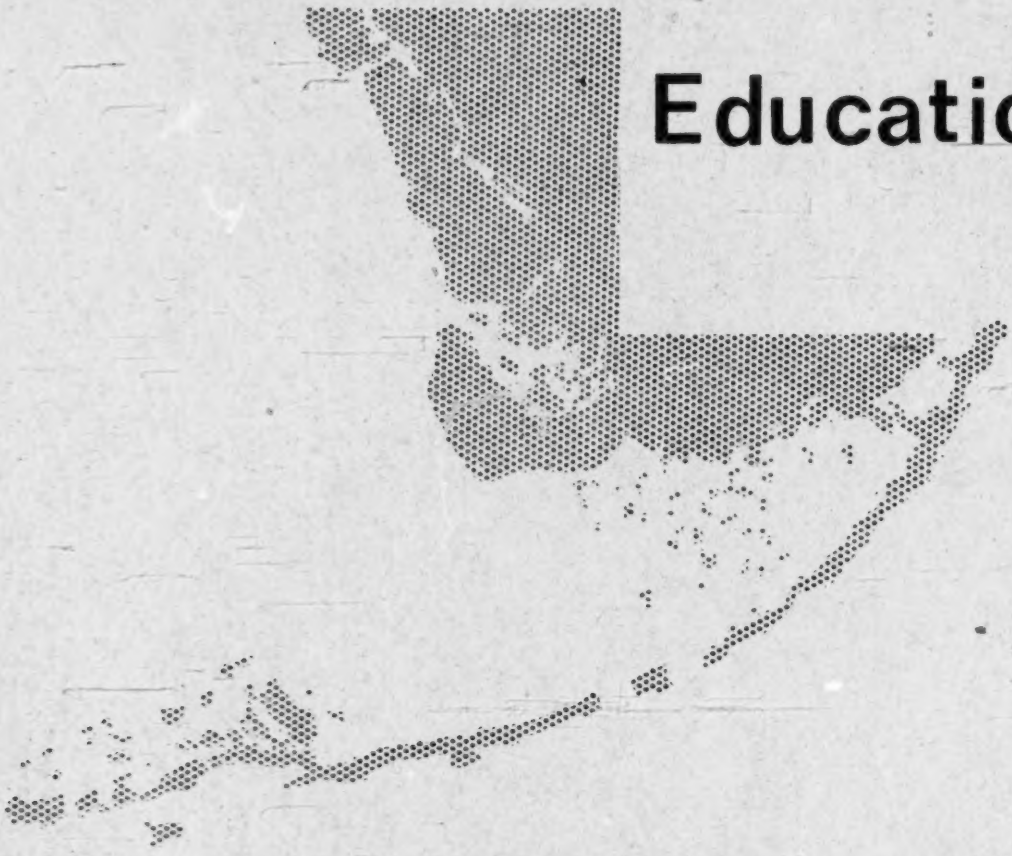

A Plan for Monroe County, Florida

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FAYETTEVILLE, ARKANSAS

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VOCATIONAL–TECHNICAL EDUCATION:

A PLAN FOR MONROE COUNTY, FLORIDA

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March, 1973

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March 1, 1973

Mr. Armando Henriquez
Superintendent of Schools
Monroe County
Key West, Florida 33040

Dear Mr. Henriquez:

The report which follows, Vocational-Technical Education, Monroe County, Florida, has been developed from a wide range of inputs, accumulated over a period of several months.

Several hundreds of man-hours have been devoted to the development of this report, and Educational and Professional Systems feels that you and the committee that you chair as well as the total citizenry of Monroe County will benefit from the inquiry.

During the course of the study, a resident coordinator, during the period November 1 through December 15, 1972, directed the efforts of the several individuals developing responses to our survey instruments. Additionally, E.P.S. officials visited the location on four separate occasions, conducted interviews with consultants and others at the State Capitol at Tallahassee and at other locations external to the State of Florida including Washington, D.C. The report reflects an inquiry that is not only intensive but likewise broadly based.

Educational and Professional Systems, Inc. would like to formally acknowledge its appreciation for the outstanding cooperation received from all personnel in both the public school system and the Florida Keys Community College in the conduct of this inquiry. The atmosphere of cordiality extended by the dedicated professionals at both levels has contributed significantly to the success of the total project.

Educational and Professional Systems, Inc.

EPS:pb

VOCATIONAL–TECHNICAL EDUCATION:
A PLAN FOR MONROE COUNTY, FLORIDA

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1. EDUCATION AND MANPOWER NEEDS

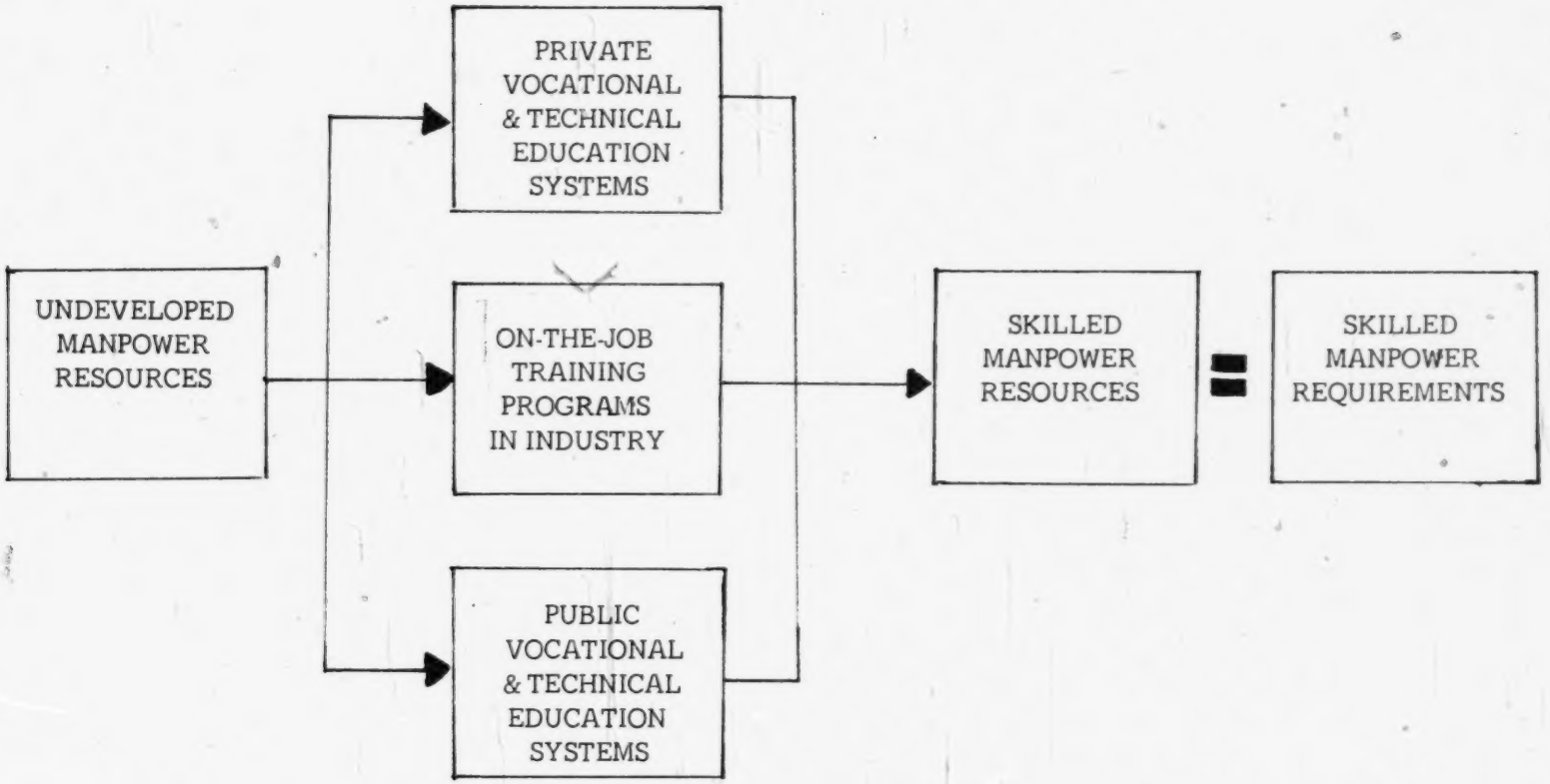
Normally, the educator states educational objectives in terms of the individuals served. The occupational education equation, shown in the figure on the following page takes a different perspective and states the objective in terms of an expanding economy. Briefly stated, if we regard the three processes by which occupational skills are developed as a total system, then the primary objective of the system is to convert undeveloped manpower resources to skilled manpower resources in both number and kind so that there is a balance between output and the skilled manpower requirements in the region served. In practice, it will never be realized perfectly. It would mean that for every person with a newly developed occupational skill, there would be an available job, and for every available job requiring such a person, there would be a qualified applicant.

In an expanding economy, where the growth emphasis is on skilled manpower resources, there are three major sources of ineffectiveness in the system diagrammed in Figure 1. These are:

1. The failure to increase the number of undeveloped manpower resources enrolled in the public and private occupational skill development programs to match the increased numbers of required skilled manpower. If there is no input growth, there can be no output growth of a sustained nature. Not only will the economy suffer the consequences, but so will the individuals who remain in the status of undeveloped or underdeveloped manpower resource.

2. The possibility of low holding power. The more individuals who leave such programs as dropouts rather than completers, the less likely will the system meet the skilled manpower requirements, and the more ineffective and inefficient will be the system. Moreover, unless they get back into the system for another try, the dropouts will remain a costly core of undeveloped or underdeveloped manpower resource, the first to fall prey to economic downturns or technological change.

3. The problem of not placing graduates into the fields for which trained. The greater the percentage of graduates who fail to enter the occupational field for which trained, the more ineffective and inefficient is the system. This is detrimental to the economy requirements for skilled manpower, and it is also detrimental to the individual. Recent evidence shows that those who enter the field for which trained experience higher earnings, greater job satisfaction, greater employment security, and greater earnings increases. Thus, maximum placement of graduates works to the advantage of individuals as well as to the economy.



THE VOCATIONAL EDUCATION AND TRAINING EQUATION

The primary objective of the collective system is to convert undeveloped manpower resources in sufficient quantity and kind so that the output will be in balance with the skilled manpower requirements of the expanding economy.

To summarize, three major objectives of public occupational education must be:

1. Expanded enrollments to meet the expanding needs for skilled manpower.

2. Continual improvement in holding power to control output of skilled manpower.

3. Continuous improvement in placement of graduates into the occupational field studied.

2. THE ECONOMY OF FLORIDA

While there are varying degrees of optimism regarding the 1973 outlook, most economists are predicting a good year for business. Conservative economists are predicting considerable economic growth with real growth of 5 per cent, coupled with price increases of at least 3 per cent.

Industrial production has been one of the weakest sectors in the economy since August, 1972. However, the industrial index has begun to rise and has moved steadily upward since January. This rise in industrial production is indicative of the willingness of businessmen to invest more than in previous years. The overall annual gain in production in manufacturing this year should come close to 4 per cent.

Construction was the mainstay of the economy last year and is expected to continue to grow in 1973. In January housing starts increased to an annual estimated rate of two million. This also means a boost to retail sales. It is to be expected that government spending will continue to increase adding impetus to the economy.

During the past ten years Florida added 800,000 people to its work force, an average of 80,000 a year. It was an impressive gain at the rate of 40 per cent, increasing the total Florida labor force to 2.6 million.

At the same time, the state's population expanded by 35 per cent, a gain of not quite two million people.

Recent data from the U.S. Department of Labor shows that in the five year period between 1967 and 1972, Florida had the fastest rate of non-farm job growth in the nation–36 per cent.

It is to be expected that between now and 1980 about two million people will move to Florida. By 1980, the state's labor force will total 3.6 million workers. Such growth would mean that by that time Florida would have added another 1,000,000 people to its labor force. Coming at a time when there is a strong sentiment among politicians and citizens of Florida toward cutting back on industrialization and also a growing selectivity on what industries to invite to Florida, the question of full employment could cause problems.

Many economists consider unemployment a major economic problem for 1973. The 1972 average rate of unemployment was 5.8 per cent, compared to 5.2 per cent the previous year. The administration's target is to get the rate down to 5 per cent by the end of this year, but some economists doubt that it will drop that low. They are in agreement, however, that it will decline, although it will do so gradually.

Most of the state's population live in the southern and central portions. One-third of the total is concentrated in Dade, Broward and Palm Beach counties. Another 27 per cent live in the five central counties of Hillsborough, Pinellas, Orange, Polk and Brevard. The table below shows the most populous counties in Florida according to the 1970 census. These fifteen counties include 79 per cent of Florida's total population.

MOST POPULOUS COUNTIES–1970
FLORIDA

RANK	COUNTY
1.	Dade
2.	Broward
3.	Duval
4.	Pinellas
5.	Hillsborough
6.	Palm Beach
7.	Orange
8.	Brevard
9.	Polk
10.	Escambia
11.	Volusia
12.	Sarasota
13.	Lee
14.	Alachua
15.	Leon

According to projections made by the Bureau of Economic and Business Research, Florida's population is estimated to reach 8,337,900 in 1978. Approximately 38 per cent of the projected growth to 1978 will be centered in the three southern counties of Palm Beach, Broward and Dade. The central part of the state, particularly in the proximity of Disney World, will continue its rapid growth. Orange County is estimated to expand its population 39 per cent in the next six years.

Osceola County's projected growth in 1978 is estimated to be 44 per cent. Another growth area includes the counties along the lower west coast area: Collier–up 37.3 per cent by 1978; Charlotte–up 35.7 per cent; and Lee–up 42.9 per cent. Population declines should be limited to one or two of the rural counties in rural northern Florida.

Employment by Major Industry and Occupations

INDUSTRY	1971 from 1970		1970 from 1969		1969 from 1968	
	Number	Percent	Number	Percent	Number	Percent
TOTAL ALL INDUSTRIES	38,100	+ 1.8	85,800	+ 4.1	137,600	+ 7.1
Manufacturing	- 6,700	- 2.1	- 4,100	- 1.2	17,900	+ 5.8
Mining	- 300	- 3.5	- 400	+ 4.9	600	- 6.9
Contract Construction	3,200	- 1.9	6,600	+ 4.0	25,000	+17.9
Trans., Comm., Electric, Gas & Sanitary Service	3,900	+ 2.5	8,500	+ 5.8	10,400	+ 7.6
Trade	16,800	+ 3.9	28,600	+ 5.3	31,000	+ 6.1
Finance, Ins., & Rl. Est.	3,600	+ 2.7	8,600	+ 6.9	10,500	+ 9.3
Services & Misc.	9,400	+ 2.4	16,200	+ 4.3	27,200	+ 7.7
Government	14,600	+ 3.7	21,000	+ 5.6	16,100	+ 4.4

Agricultural employment in Florida is dominated by the citrus industry. About one-third of Florida's total average agricultural employment of around 150,000 farm workers are employed by the citrus industry. The trend of a gradual decline in total agricultural employment is expected to continue in Florida during the next few years. This is primarily the result of increased technological developments leading to continued mechanization of more harvesting operations each year and to the decreasing number of farms, especially the small farms.

Projected Population Change and Components of Change

(numbers in thousands)

	1965 to 1975	1975 to 1985
Net increase	1,749	2,296
Natural increase	652	1,109
Net migration	1,097	1,187

Projections of the Population by Age Group

(numbers in thousands)

	1970	1975	1980	1985
All ages	6,603	7,552	8,648	9,849
Under 18 years	2,232	2,535	2,933	3,471
18 to 24 years	754	896	1,011	1,031
25 to 44 years	1,531	1,779	2,140	2,569
45 to 64 years	1,255	1,420	1,549	1,671
65 years and over	831	922	1,015	1,107

Projections of the Population Aged 21 and Over, by Sex

(numbers in thousands)

	1970	1975	1980	1985
Total, 21 and over	4,038	4,617	5,275	5,957
Male	1,913	2,178	2,485	2,807
Female	2,125	2,439	2,790	3,150

Source: Current Population Reports, Series P-25, No. 375 (October, 1967), Bureau of Census, U.S. Department of Commerce.

POPULATION AND LABOR FORCE FOR FLORIDA AND PROJECTIONS

(14 Years and Over)

	MALE		FEMALE		TOTAL	
Year	Population	Labor Force	Population	Labor Force	Population	Labor Force
1950	1,356,225	757,620	1,406,640	334,975	2,762,865	1,092,600
1960	2,437,000	1,251,000	2,515,000	636,000	4,952,000	1,887,000
1965	2,829,000	1,665,000	2,976,000	844,000	5,805,000	2,508,000
1970	3,369,000	2,127,000	3,542,000	1,031,000	6,911,000	3,158,000
1975	3,986,000	2,517,000	4,221,000	1,266,000	8,208,000	3,783,000
1980	4,640,000	2,940,000	4,942,000	1,532,000	9,598,000	4,472,000

Population and labor force figures for 1950 and 1960 are from the Bureau of the Census. Estimated population for future years was made by the Bureau of the Census and recognized many components of population change such as births, deaths, and net migration. It assumed a moderate decline in fertility and that migration patterns of the 1955-60 period will persist.

Labor force projections for 1965 and 1970 were prepared by the Bureau of Labor Statistics. Labor force projections for 1975 and 1980 were made by first determining the percentage of the total population that was in the labor force in the years 1950 and 1960, and projected to be in the labor force, by the Bureau of Labor Statistics, in 1965 and 1970. The rate of change in the percentages for these years was determined and an adjustment factor was applied to determine the percentages to use with the total population figures as projected by the U.S. Department of Labor for the years 1975 and 1980. The adjusted percentage for the projected years was then multiplied by the projected population for that year. The product was then added to the projected population, to determine the projected labor force.

While an entire state is a useful entity for many economic purposes--especially where its boundaries are strictly relevant to actions such as taxation and expenditure by the state government--a state invariably encompasses sub-areas of great diversity from the point of view of most of the important educational and economic variables.

For purposes of analysis, the state was subdivided into five sectors:

Sector I: Southwest Florida

Counties comprising Southwest Florida:

Lee, Pinellas, Hernando, Sumter, Manatee, Hardee, DeSoto, Hillsborough, Pasco, Citrus, Polk, Sarasota, Highlands, and Charlotte.

Sector II: Southeast Florida

Counties comprising Southeast Florida:

Dade, Palm Beach, Collier, Glades, Martin, Indian River, Broward, Monroe, Hendry, Okeechobee, and St. Lucie.

Sector III: Central Florida

Counties comprising Central Florida:

Orange, Brevard, Lake, Volusia, Seminole, Osceola, Marion, and Flagler.

Sector IV: Northeast Florida

Counties comprising Northeast Florida:

Duval, St. Johns, Putnam, Bradford, Baker, Gilchrist, Dixie, Suwannee, Nassau, Clay, Alachua, Union, Columbia, Levy, Lafayette, and Hamilton.

Sector V: Northwest Florida

Counties comprising Northwest Florida:

Leon, Madison, Wakulla, Liberty, Gulf, Jackson, Santa Rosa, Walton, Washington, Taylor, Jefferson, Gadsden, Franklin, Calhoun, Escambia, Okaloosa, Holmes, and Bay.

This is a somewhat arbitrary division, but any other pattern would demonstrate much the same thing. The basis of organization was groups of counties clustered around centers of population. In most instances the counties on the periphery of the sectors do not have unusually large populations and hence the shifting of these to or from given sectors would not significantly alter the conclusions.

For analytical purposes, and especially for educational forecasting, it is mandatory to distinguish between "developed" and "underdeveloped" counties. An examination of statistics related to population, employment, education, and income show quite a sharp difference between counties that are doing well and those that are not. At the same time, it is important not to equate "industrialization" and "development" because it is possible to make great economic progress through improved agriculture, expansion of livestock production, mining, wholesaling, and service activities.

Of importance in a review of state population growth is the distinction between the gains that come from the natural increase of the state's resident population, and the gains that come from net migration, that is, from the interstate movement of population from one state to another. The reason for distinguishing these two sources of population growth is that states of rapid growth, such as Florida, achieve their high rates by adding large net migration gains to their natural increase. Educational planners should keep the following in mind: Florida's past and present growth has been the direct and immediate result of the attraction the state has for citizens of other states; the state's future growth will depend very largely on maintaining and expanding these attractive features; and there are other states which are growing rapidly because they are, and will continue to be, highly attractive to the mobile citizen as well as to labor-intensive industry.

The record of the past five years does not provide any assurance that manufacturing, for example, will be an adequate source of new employment opportunities and income which Florida needs for continued growth. Support for the state's future growth will be found in the area that has been responsible primarily for Florida's growth over the last two decades–the services area. The recognition of this finding has deep and far-reaching implications for educational planning.

Southwest Florida

Southwest Florida will continue to maintain its position as a center of manufacturing in the state through this decade, registering an increase of nearly 170 per cent in manufacturing activity in this period. Manufacturing growth has been rapid and steady through this part of Florida.

The gain in manufacturing in the period from 1960 to 1970 was nearly 150 per cent and even greater growth is seen in the coming ten years. The southwest will be turning out manufactured products valued at $2.8 billion in 1979, an increase of 160.0 per cent over the present

rate. Only one section of Florida--the southeast--tops the southwest section in manufacturing activity. Together, these two areas account for more than half the value of the state's manufactured output, and both are growing as manufacturing centers. The rate of growth in both these sections, as a matter of fact, will exceed the state average in the next decade.

Because of continued growth in all sectors of its economy, the southwestern section of the state will show some remarkable gains in personal income during the years ahead. Personal income should reach $8.6 billion by 1978 for an increase of 102.5 per cent. The change in the twenty-year period from 1959 to 1978 is 280.7 per cent.

Per capita income in the southwest should rise and by 1978 reach $4,640 for a gain of 49 per cent. In the span from 1959 to 1978, per capita incomes in the southwest are slated to double.

Population in the southwest section of Florida has risen dramatically and this growth rate is due to accelerate in future years. According to recent research studies, the southwest section will have 2.1 million people by 1978, an increase of 35 per cent compared with its present population.

Southeast Florida

Although climate and its attendant phenomena, tourists, form the backbone of the economy of southeast Florida, new economic forces are at work that will outweigh the impact of tourism in the future. These forces will bring sharp changes in the southeast Florida business picture in the next ten years.

Over the last few years, the service trades have been expanding steadily in southeast Florida at the expense of the wholesale-retail trade category. It is estimated that the service trades by 1979 will account for $2.5 billion.

The value added by manufacturing in the southeast section last year was $1.5 billion. A projection of the value added figure for 1978 is $2.95 billion. This will mean that this section of Florida will have the highest level of manufacturing activity of any of the state's five areas in 1978. The southwest will run a close second.

Central Florida

While each of Florida's five survey areas is due for dynamic growth in coming years, the most dramatic changes will take place in the central section. The rate of change is greater here perhaps than anywhere else in the United States. In four major aspects of its economy–population, manufacturing activity, personal income, and receipts for the service trades–the central section will top all other areas of the state in the next ten years in rate of growth.

It is estimated that by 1980, 16 per cent or 84,500 of the projected 515,000 persons employed in the region will be working at industrial jobs. No other area of the state comes anywhere near matching the percentage rise in total personal income of the central section.

Northeast Florida

A single metropolitan area–Jacksonville [Duval County]–dominates the economy of the northeast area, in contrast to some areas of the state that have two or three cities of comparable size. Duval County comprises almost 63 per cent of the northeast section of the state.

Despite the presence of this large metropolitan area, the northeast section is next to last in population among the five regions in the state, ranking just ahead of the northwest section. And although its population will increase at a faster rate in the coming years than it has in previous years, the northeast still will be fourth in the state in population in 1978, since other areas also will be growing proportionately. By 1978, the population of the northeast section will exceed one million–an increase of 22.6 per cent.

Northwest Florida

One category in which accelerated growth can be expected in the northwest section is population. During the coming ten years, the area's population is projected to rise to 800,000 for an increase of nearly 20 per cent. The twenty-year growth rate, 1960 to 1980, will be 38.0 per cent.

Manufacturing activity, which has increased sharply in the northwest section in the last years, is expected to grow even more rapidly in the next ten. This also is a major reason for the substantial growth in the area's population in the last decade. In 1958, value added by manufacturing in the northwest section amounted to only $187 million. By 1978, the northwest section will be turning out manufactured goods valued at $840 million.

Further and more rapid growth in total personal income is forecast for the northwest section in the coming years and by 1978, personal income from services will exceed $3 billion, for a gain of 87.8 per cent during a ten-year period. The gain from 1958 to 1978 will be 248 per cent.

During the decade ahead, per capita income in the northwest will continue to increase, reaching $3,820 by 1978 for a growth rate of 56.5 per cent. This, too, will exceed the state average of 46.7 per cent in that period, as well as the national average. In a twenty-year period (1958 to 1978), the rate of increase in per capita income will be 152.9 per cent. This is well ahead of all the other areas of Florida.

Summary

Entering into the productivity estimate, one consideration with important implications for education is that several of the most rapidly growing sectors of Florida's economy, e.g., the service sector, are characterized by slow growth in productivity. Another consideration is that agriculture is becoming a rapidly diminishing share of total economic activity in Florida. The agricultural sector has been dominated by high rates of productivity increase which have served to pull up the state's average productivity.

These sharp changes in Florida's economy will be accompanied by important shifts in the sources of income of its residents. As the state's economy comes of age, the proportion of income Floridians receive from some categories–notably agriculture and construction–will decline, while others–the service trades–will rise.

3. MANPOWER AND INDUSTRY NEEDS

The prospects for future economic growth are excellent, provided Florida can maintain the conditions necessary for holding and attracting three groups in the population. There is, for example, the youth group now reaching working age, a rather large group which is bound to out-migrate if its members fail to find adequate employment opportunity. There are also the new migrants of working age who have moved into the state and will stay only if they find employment. Third, there is the group of retired people who moved to Florida, seeking the

amenities of life and who will stay only if they find an attractive environment. The extent of the absorption of these groups into the resident population of Florida will be the major determinant of growth. It is to be expected that there will be a dynamic shift away from the more congested and expensive areas, such as Miami and the lower east coast in general.

Employment Patterns

About 40 per cent of Florida's labor force are in the following area: Broward, Collier, Dade, Glade, Hendry, Indian River, Martin, Monroe, Okeechobee, Palm Beach, and St. Lucie. It is interesting that the above counties have more people working than ever before, but there is also higher unemployment than in 1971.

Retail and sholesale industries account for approximately 20 per cent of the labor force, while the self-employed category is the second largest (15 per cent).

Despite government defense and aerospace cut-backs during recent years, which cut employment by about 12,000 jobs, manufacturing runs third as most important employer in the above mentioned counties. At present there are approximately 120,000 people employed, a number that should greatly increase during the next years.

Services rank fourth in this area, contributing almost the same number of jobs as manufacturing.

With a 1,000,000 population expansion forecast by 1980, approximately half a million jobs will be needed in this area during this period. It is interesting to note that while agricultural employment in the rest of the state is declining, it rose slightly in these counties to meet the food demands of this region. For example, in 1963 agricultural employment was 47,350. By 1970 it had risen to approximately 50,000. Today there are approximately 52,000 workers employed in agriculture.

A recent survey conducted by Milo Smith and Associates, Inc., Tampa, Florida, contains the following information:

> In terms of the relationship between occupation characteristics and industry groups, 22.2 per cent of all employed professional and managerial workers were found in the "forestry and fisheries" industry group. The construction industry accounted for 27.6 per cent of professional and managerial occupations. Analysis of the occupation types

> in the retail sales group reveals that one-third of the workers are managers or proprietors and 44 per cent are sales clerks. This nearly even division of workers between the two types of occupations implies that a relatively large proportion of the retail sales establishments are operated by small businessmen rather than large chain syndicates.
>
> Nearly 68 per cent of all service workers are classified in the professional and managerial occupations, while only 16.7 per cent actually sell services or are in an occupation below that of professional. The implication here is that there are many professional practitioners of such services as medicine, law, engineering, accounting, and the like. Furthermore, this indicates a strong orientation toward small professional enterprises operated by a private practitioner with relatively few employees. It should be noted that many of the typical "services" sold to tourists in restaurants, hotels, and night clubs and other entertainment places, are considered retail trade rather than service occupations.[1]

Present data indicate that more than 84 per cent of household heads work within Monroe County and that approximately ten per cent are employed in the greater Miami area. Several conclusions can be derived from this information.

> First, there is relatively little commutation between Monroe County and the employment centers in Dade County.
>
> Second, employment of Monroe County residents in other Florida counties is a negligible factor.
>
> Third, employment outside of the state appears to be generally restricted to seasonal residents and persons in the maritime trades who were classified as working outside the United States if their work took them beyond the three-mile limit. In general, however, those persons working outside of Florida were seasonal residents who were employed in other states.
>
> The final conclusion regarding the distribution of the places of employment can be summed up by stating that most of the residents who work are employed within the county, and that many of the seasonal residents are retired persons who do not have regular gainful employment in any location.[2]

Projection of the Monroe County Economy

It is important to recognize that there are certain limitations associated with quantitative forecasts. It is almost impossible to anticipate with great accuracy the employment patterns of new enterprises in this portion of Southeast Florida. The following assumptions approximate, with reasonable accuracy, relationships between broad sectors of the economy.

---

[1] Milo Smith and Associates (Tampa Florida) and Hale and Kullgren, Inc., (Akron, Ohio), Environment and Identity: A Plan for Development in the Florida Keys, June, 1970, pp. 59-60.

[2] Ibid., p. 60.

Planning consultants Milo Smith and Associates, Inc., formulated ratios on the basis of gain in employment in Key West by sector versus total gain in population. These ratios are as follows:[1]

Ratios Between Wage and Salary Employment and Population Growth in Key West

Forestry, Fishing and Mining	.80
Manufacturing	.52
Transportation, Communications, and Utilities	1.72
Construction	1.94
Trade	2.00
Finance, Insurance, Real Estate	3.09
Services	2.08
Government	1.70

The consultants arrived at the following conclusions regarding future development of various industrial sectors:

Manufacturing.

> Due to a lack of transportation facilities and limited amounts of buildable land area in Key West, this sector will receive only nominal gains. Types of industries that could possibly be attracted to Key West are boat building and repair facilities.[2]

Transportation, Communications and Utilities. This category will see a steady increase resulting from major projects that must be undertaken such as sewer improvements and a water desalinization plant.

> The most significant gains in the transportation field will mainly be in port related activities. Increasing usage of automated handling devices will possibly reduce labor per ton of cargo, but the increasing importance of the fishing industry will have the net effect of increasing total employment.[3]

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[1] Milo Smith and Associates (Tampa, Florida), Research and Analysis, Part I of a Comprehensive Planning Report for the City of Key West, Florida, April, 1967, p. 32 D.

[2] Ibid., p. 32 D.

[3] Ibid.

Wholesale and Retail Trade.

> This consumer oriented employment category will record the most noticeable gain in total employment. This is mainly a result of the fact that as a larger percentage of the total population becomes non-militarily oriented an increasing number of stores will be needed to service this population. The wholesaling portion of this category will only receive nominal increases in total employment during the next twenty years and has tended to lower the total growth ratio.[1]

Services. The major increases in this category will result from the continued increases in tourist related activities.

> Hotels, motels, amusements, and automotive will witness the largest increase in this category. Business and personal services will increase as a result of the larger portion of the population having non-military orientation.[2]

Summary

In general, the distribution of employment among industry groups in Monroe County appears to be relatively even, but significant concentrations are found in those industries closely involved with the county's population growth and its involvement in the tourist trade of the region.

> It is foreseen that emphasis in these particular industry groups will continue throughout the next decade but a greater "industrial mix" will begin to emerge beyond 1980 when a higher population base has been established and greater economic maturity has developed in the county. When this state is reached a greater degree of economic security and a lesser impact of seasonal variations should be felt by county residents.[3]

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[1] Ibid.

[2] Ibid.

[3] Milo Smith, et. al., Environment and Identity, p. 60.

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NATIONAL PROJECTIONS

The accompanying national projections indicate the growth in the various industries and occupations that is expected by 1980. Nationally it projected that total employment will increase 20.9 percent, with a very sharp increase in construction employment (33.5 percent increase over the 1970 figure), and a very large increase in service occupations, 41.9 percent. Manufacturing employment is expected to increase 12.4 percent (from 19.7 million to 22.2 million by 1980). Durable goods manufacturing will increase 15.4 percent, while nondurable goods manufacturing will increase 8.1 percent. Wholesale and retail trade will increase 13.4 percent, with a larger percentage increase in wholesaling, 16.4 percent. Employment in transportation, communication and public utilities will increase approximately 7.8 percent. Finance, real estate and insurance firms' employment is projected to increase to 4.4 million over the 1970 figure of 3.9 million, a 14.1 percent increase. Public administration employment is expected to grow approximately 800,000 or 27.6 percent.

These national projections are all important to any local area, but to an area such as Monroe County and Key West in particular, the most important industrial projection is that of the service industry. As has been stated before, service employment and government employment are the most important to Monroe County.

A further breakdown of the service employment on the national level reveals that business service employment will increase by 91.2 percent or approximately 1.5 million, medical and other health services will increase 44.2 percent over the 1970 level (approximately 2 million persons), engineering and architectural employment 70.3 percent; educational service employment will increase 43.2 percent or by about 2.7 million; recreational services will increase 68.3 percent (approximately 360,000). Local government employment will increase 41.6 percent, which is the largest increase in the governmental sector.

In viewing the national employment projections on the basis of occupation, it is revealed that the professional, technical and kindred occupations will enjoy the largest increase, 39.1 percent, and medical workers of all types will increase 41.4 percent.

The number of nurses are projected to increase from 689 thousand to 983 thousand, 42.7 percent increase; physicians and surgeons will increase from 265 thousand to 395 thousand, a 48.5 percent increase. The largest increase in the health field will occur in the medical and dental technician categories, an increase of 219 thousand, or 80.2 percent.

TOTAL NATIONAL EMPLOYMENT BY INDUSTRY, 1970
AND PROJECTED 1980

Industry	1970	Projected 1980 Requirements	Percent Change
Industry total	78,627	95,085	20.9
Agriculture, forestry & fisheries	3,566	3,120	-12.5
Mining	637	560	-12.1
Construction	4,568	6,100	33.5
Manufacturing	19,735	22,175	12.4
Durable	11,473	13,240	15.4
Nondurable	8,262	8,935	8.1
Transportation, communications, public utilities	5,065	5,465	7.8
Transportation	2,909	3,095	6.4
Communication	1,088	1,175	8.0
Electric, gas and sanitary services	1,068	1,195	11.9
Wholesale and retail trade	16,030	18,180	13.4
Wholesale	3,959	4,610	16.4
Retail	12,071	13,570	12.4
Finance, real estate & ins.	3,862	4,405	14.1
Services	20,739	29,435	41.9
Private household	1,781	2,150	20.7
Other services	18,958	27,285	43.9
Public administration	4,425	5,645	27.6

Source: U.S. Bureau of Labor Statistics, Tomorrow's Manpower Needs, Vol. IV Revised 1971, The National Industry-Occupational Matrix and Other Manpower Data, Bulletin 1737, 1972 (Washington: Government Printing Office).

TOTAL NATIONAL EMPLOYMENT, SERVICE INDUSTRY, 1970 AND PROJECTED 1980

(In Thousands)

Industry	1970	Projected 1980 Requirements	Percent Change
Services	20,739	29,435	41.9
Private household	1,781	2,150	20.7
Services, except private household	18,958	27,285	43.9
Hotels	995	1,320	32.7
Personal services	1,406	1,980	40.8
Laundry, dry cleaning & valet	587	730	24.4
All other	819	1,250	52.6
Misc. business services	1,600	3,060	91.2
Advertising	123	140	13.8
Other	1,477	2,920	97.7
Auto repair, & garage	513	635	23.4
Misc. repairs service	325	355	9.2
Entertainment & recreation	748	1,085	45.1
Moton pictures & theatres	252	250	-0.8
Misc. entertainment & revenues	496	835	68.3
Medical & other health services	4,403	6,350	44.2
Hospitals	2,732	3,850	40.9
Other	1,671	2,500	49.6
Legal services	387	525	35.7
Educational	6,317	9,050	43.2
Non-profit membership organizations	1,654	1,830	10.6
Welfare & religion	1,221	1,415	15.9
Other	433	415	-4.2
Miscellaneous services	790	1,095	38.6
Engineering & architectural	317	540	70.3
Accounting & bookkeeping	267	300	12.4
All other	206	255	23.8
Public administration	4,425	5,645	27.6
Postal	704	875	24.3
Other federal	1,566	1,750	11.7
State government	672	920	36.9
Local government	1,483	2,100	41.6

Source: U.S. Bureau of Labor Statistics, Tomorrow's Manpower Needs, Vol. IV, Revised 1971, The National Industry-Occupational Matrix and Other Manpower Data, Bulletin 1737, 1972 (Washington: Government Printing Office).

TOTAL NATIONAL EMPLOYMENT, BY OCCUPATION, 1970
AND PROJECTED 1980
(In Thousands)

Occupation	1970 Employment	Projected 1980 Requirements	Percent Change
Total	78,27.0	95,085.0	20.9
Professional, technical & kindred	11,140.0	15,500.0	39.1
Engineers	1,081.2	1,498.1	38.6
Medical practioners & other health workers	1,776.4	2,512.2	41.4
Teachers	3,072.0	3,382.0	10.1
Other professionals	5,210.4	8,107.7	55.6
Managers, officials	8,289.0	9,500.0	14.6
Sales	4,854.0	5,760.0	18.7
Clerical	13,715.0	17,285.0	26.0
Craftsmen, foremen & kindred	10,158.0	12,240.0	20.5
Construction	2,765.0	3,621.0	31.0
Mechanics & repair	2,792.0	3,397.9	21.7
Metal craftsmen	1,215.0	1,426.6	17.4
Other craftsmen	3,386.0	2,367.9	-30.1
Operatives	13,909.0	15,440.0	11.0
Drivers & deliverymen	2,510.0	2,900.0	15.5
Transportation	142.0	138.0	-3.5
Semi-skilled metalworking	1,892.0	2,239.0	18.3
Semi-skilled textile occu.	957.5	1,087.0	13.5
Other	8,407.5	9,077.0	8.0
Service workers	9,712.0	13,060.0	34.5
Private household	1,558.0	1,980.0	27.1
Protective	968.0	1,300.0	34.3
Food service	2,231.0	2,781.0	24.7
Other	4,995.0	6,999.0	40.1
Laborers, except farm & mine	3,724.0	3,700.0	-0.6
Farmers & farm workers	3,126.0	2,600.0	-16.9

Source: U.S. Bureau of Labor Statistics, Tomorrow's Manpower Needs, Vol. IV, Revised 1971, The National Industry-Occupational Matrix and Other Manpower Data, Bulletin 1737, 1972 (Washington: Government Printing Office).

Technicians other than medical and dental are expected to increase to 1,417,100 by 1980 from 1,011,700 in 1970. The need for draftsmen will increase approximately 126,000 or 40.8 percent; the need for other types of technicians will increase by approximately 250,000 or by 40.8 percent.

The category other professional and kindred workers will increase approximately 2.3 million, or 61.8 percent. Among those professions specified, accountants and auditors will increase 309,000 or 62.9 percent; personnel and labor relations workers will increase approximately 90,000 or 68.9 percent, while workers and teachers in the arts and entertainment will increase 159,000 or 21.2 percent.

Clerical workers will increase approximately 3.5 million or by about 26 percent in the decade. The demand for stenographers, typists and secretaries will increase by approximately one million persons, or 30.7 percent; office machine operators will increase nearly 300,000 or 52.2 percent. The projected need of 1.5 million accounting clerks and bookkeepers is an increase of 11.9 percent.

Among craftsmen the largest need is in the construction crafts and it is anticipated that this will grow 31 percent. Projections indicate that the demand for carpenters will continue to rise; employment in this category will increase 245,000 or 29.5 percent, the largest amount of any occupation in the craftsmen group. The expected requirements for brickmasons, stonemasons, and tile setters is expected to increase 30 percent, or about 60,000; electrician requirements are projected upward 33.0 percent or 145,000.

Painter and paperhanger employment is expected to rise 110,000 or 28.3 percent; the demand for plumbers and pipefitters will increase 120,000 or 34.3 percent.

Among the other craftsmen the demand for metal craftsmen is expected to increase approximately 17.4 percent. Machinists' employment opportunities are expected to be the most, approximately 75,000; tool and diemakers 55,000.

Printing trades craftsmen will only enjoy modest increases. Transportation and public utility craftsmen will increase about 114,000 or about 26.3 percent with most of this increase being in linemen and servicemen for telephone and power companies (110,000 or 31.3 percent).

Mechanics and repairmen will continue to have increased employment opportunities, approximately 600,000 or 21.7 percent increase. One hundred-ninety thousand of this increase will be

in motor vehicle mechanics. Other mechanics and repairmen are projected to increase 285,000 or 22.9 percent over 1970 employment levels.

Other types of craftsmen will continue to have only modest demand for their services.

Operatives and kindred workers will increase approximately 1.5 million from 1970 to 1980. Drivers and deliveryman projected employment will near 2.9 million by 1980, or approximately 400,000 more jobs than in 1970 (15.5 percent increase). Semi-skilled metalworking occupations will increase 347,000, or 18.3 percent; welders opportunities will increase 26.2 percent or 140,000 jobs in the decade.

The projected requirements for service workers will increase 3.3 million or 34.5 percent; household service workers expected employment opportunities will increase 422,000 or 27.1 percent by 1980. Workers in protective services will have opportunities for 332,000 additional jobs (34.3 percent) by 1980. The total of other types of service workers will increase nearly 2.5 million or about 41.3 percent. The largest increase in this group will occur in hospital and institutional attendants. The opportunities will grow from 830,000 in 1970 to 1,500,000 in 1980, or about 80.7 percent.

The need for laborers in all types of industries will decrease. Employment for all laborers except farm and mine will decrease slightly, while the demand for farmers and farm workers will decrease sharply from 3,120,000 in 1970 to 2,600,000 in 1980 which represents a 16.2 percent decrease.

TOTAL NATIONAL EMPLOYMENT BY INDUSTRY
1970 AND PROJECTED 1980

Total national employment by industry, 1970 and projected 1980

(In thousands)

Industry	1970	1980
Industry, total	78,627	95,085
Agriculture, forestry and fisheries	3,566	3,120
Agriculture	3,462	3,000
Forestry	57	70
Fisheries	47	50
Mining	637	560
Metal mining	95	85
Coal mining	146	90
Crude petroleum and natural gas	277	250
Quarrying and nonmetallic mining	119	135
Construction industry 1/	4,568	6,100
Manufacturing	19,735	22,175
Durable goods manufacturing	11,473	13,240
Lumber and wood products, excluding furniture	642	640
Logging camps and contractors	126	115
Sawmills, millwork, and miscellaneous wood products	516	525
Furniture and fixtures	463	620
Stone, clay, and glass products	642	795
Glass and glass products	182	215
Cement, concrete and plaster	220	320
Structural clay products	58	70
Pottery and related products	44	35
Miscellaneous nonmetallic mineral and stone products	138	155
Primary metals industries	1,295	1,330
Blast furnaces and steel works	554	530
Other primary metals industries	356	380
Primary nonferrous metals	385	420
Fabricated metal products 2/	1,681	1,895
Machinery, except electrical	1,984	2,445
Farm machinery and equipment	128	170
Office machinery	283	395
Miscellaneous machinery	1,573	1,880
Electrical machinery, equipment, and supplies	1,904	2,315
Transportation equipment	1,938	2,130
Motor vehicles and equipment	805	890
Aircraft and parts	687	755
Ship and boat building	291	340
Railroad and other transportation equipment	155	145
Instruments and allied products 3/	475	565
Instruments and fire control	441	525
Watches and clock devices	34	40
Miscellaneous manufacturing	449	505
Nondurable goods manufacturing	8,262	8,935
Food and kindred products	1,802	1,760
Meat products	343	330
Dairy products	245	225
Canning, preserving, and freezing	282	300
Grain mill products	139	125
Bakery products	284	260
Beverage industries	241	260
Other food products	268	260
Tobacco manufacturers	78	65
Textile mill products	958	905
Apparel and related products	1,392	1,685
Paper and allied products	705	790
Pulp, paper, and paperboard mills	293	305
Paperboard containers and boxes	224	240
All other paper products	188	245
Printing, publishing and allied products	1,179	1,315
Chemicals and allied products	1,058	1,180
Synthetic fibers	113	135
Drugs and medicine	149	185
Paints, varnishes, and related products	70	75

See footnote at end of table.

Total national employment by industry, 1970 and projected 1980--Continued

(In thousands)

Industry *	1970	1980
Other chemicals	726	785
Petroleum refining and related industry	191	150
Petroleum refining	152	110
Other petroleum and coal products	39	40
Rubber and miscellaneous plastic products	568	750
Rubber products	281	315
Miscellaneous plastic products	287	435
Leather and leather products	331	335
Leather tanning and finishing	27	25
Footwear, except rubber	232	235
All other leather products	72	75
Transportation, communication, and public utilities	5,065	5,465
Transportation	2,909	3,095
Railroad transportation	613	475
Local and suburban transit and interurban passenger transportation	401	410
Local and interurban except taxis	265	290
Taxis	136	120
Motor freight transportation and storage	1,187	1,325
Trucking	1,093	1,230
Warehousing	94	95
Water transportation	225	240
Transportation by air	349	475
Pipelines	17	15
Transportation services	117	155
Communication and public utilities	2,156	2,370
Communication	1,088	1,175
Telephone	900	985
Telegraph	50	35
Radio and television	138	155
Electric, gas, and sanitary services	1,068	1,195
Electric, gas, and steam	699	675
Water and irrigation	135	225
Sanitary services	234	295
Wholesale and retail trade	16,030	18,180
Wholesale trade	3,959	4,610
Motor vehicles and equipment	336	400
Drugs and chemicals	230	275
Dry goods and apparel	156	185
Groceries and related	574	560
Electrical goods, plumbing, and heating supplies	501	620
Machinery and equipment	756	1,000
Farm produce and miscellaneous	1,406	1,570
Retail trade	12,071	13,570
Building materials, hardware, and farm equipment	602	545
General merchandising	2,352	2,815
Limited price stores	320	325
Other general merchandise	2,032	2,490
Food and drug stores	1,919	2,180
Automobile dealers and gas stations	1,795	2,155
Automobile dealers	1,033	1,290
Gas stations	762	865
Apparel and accessories	748	725
Furniture, etc.	524	560
Eating and drinking places	2,644	3,000
Miscellaneous retail stores	1,487	1,590
Drug stores	434	535
Other retail stores	1,053	1,055
Finance, insurance, and real estate	3,862	4,405
Finance	1,636	1,910
Banks and credit agencies	1,385	1,660
Stock brokers and investment companies	251	250
Insurance	1,372	1,550
Real estate 4/	854	945
Services	20,739	29,435
Private household	1,781	2,150

See footnotes at end of table.

Total national employment by industry, 1970 and projected 1980--Continued

(In thousands)

Industry	1970	1980
Services, except private households	18,958	27,285
Hotels and other lodging places	995	1,320
Personal services	1,406	1,980
Laundry, cleaning, and valet services	587	730
All other personal services	819	1,250
Miscellaneous business services	1,600	3,060
Advertising	123	140
Other miscellaneous business services	1,477	2,920
Automobile repair services and garage	513	635
Miscellaneous repair services	325	355
Entertainment and recreation	748	1,085
Motion pictures and theaters	252	250
Miscellaneous entertainment and recreation	496	835
Medical and other health services 5/	4,403	6,350
Hospitals	2,732	3,850
Other medical and health services	1,671	2,500
Legal services	387	525
Educational services	6,137	9,050
Nonprofit membership organizations	1,654	1,830
Welfare and religious	1,221	1,415
Other nonprofit	433	415
Miscellaneous services	790	1,095
Engineering and architectural	317	540
Accounting and bookkeeping	267	300
All other professional services	206	255
Public administration 6/	4,425	5,645
Postal services	704	875
Other federal public administration	1,566	1,750
State government	672	920
Local government	1,483	2,100

1/ Includes construction employment in government agencies.
2/ Includes employment in ordnance (SIC 19, except 194 which is included in instruments, except clocks).
3/ Includes employment in ordnance (SIC 194).
4/ Includes employment in combination of real estate, insurance, loans, and law offices (SIC 67).
5/ Includes medical and other health services in government agencies.
6/ Includes public administration employment only. Government agencies engaged in educational and medical services and in activities commonly carried on also by private enterprises such as transportation and manufacturing, are classified in the appropriate industrial category.

Source: U.S. Bureau of Labor Statistics, Tomorrow's Manpower Needs, Vol. IV, Revised 1971, The National Industry-Occupational Matrix and Other Manpower Data, Bulletin 1737, 1972 (Washington: Government Printing Office).

TOTAL NATIONAL EMPLOYMENT BY OCCUPATION

1970 AND PROJECTED 1980

Total national employment, by occupation, 1970 and projected 1980--Continued

(In thousands)

Occupation	1970 Employment	Projected 1980 requirements
Postmasters and assistants	35.0	35.0
Managers, officials and proprietors, not elsewhere classified	7,945.0	9,109.0
Clerical and kindred workers	13,715.0	17,285.0
Stenographers, typists, and secretaries	3,504.0	4,580.0
Office machine operators	565.0	860.0
Other clerical and kindred workers	9,646.0	11,845.0
Accounting clerks	480.0	530.0
Bookkeepers, hand	860.0	970.0
Bank tellers	225.0	337.0
Cashiers	847.0	1,110.0
Mail carriers	254.0	320.0
Postal clerks	390.0	385.0
Shipping and receiving clerks	379.0	430.0
Telephone operators	420.0	480.0
Clerical and kindred workers, not elsewhere classified	5,881.0	7,283.0
Sales workers	4,854.0	5,760.0
Craftsmen, foremen and kindred workers	10,158.0	12,240.0
Construction craftsmen	2,765.0	3,621.0
Carpenters	830.0	1,075.0
Brickmasons, stonemasons, and tile setters	200.0	260.0
Cement and concrete finishers	65.0	90.0
Electricians	440.0	585.0
Excavating, grading, and road machinery operators	310.0	415.0
Painters and paperhangers	390.0	500.0
Plasterers	35.0	40.0
Plumbers and pipefitters	350.0	470.0
Roofers and slaters	60.0	76.0
Structural metalworkers	85.0	110.0
Foremen, not elsewhere classified	1,488.0	1,700.0
Metalworking craftsmen, except mechanics	1,215.0	1,426.6
Machinists	585.0	660.0
Blacksmiths, forgemen and hammermen	26.0	25.7
Boilermakers	24.0	26.5
Heat treaters, annealers, temperers	22.0	24.4
Millwrights	80.0	94.0
Molders, metal except coremakers	56.0	62.5
Patternmakers, metal and wood	43.0	56.8
Rollers and roll hands	30.0	31.7
Sheet metal workers	154.0	195.0
Toolmakers, diemakers, setters	195.0	250.0
Printing trades craftsmen	312.0	330.3
Compositors and typesetters	175.0	165.0
Electrotypers and stereotypers	5.0	4.0
Engravers, except photoengravers	13.0	16.3
Photoengravers and lithographers	34.0	50.0
Pressmen and plate printers	85.0	95.0
Transportation and public utility craftsmen	441.1	557.0
Linemen and servicemen, telephone and power	380.9	500.0
Locomotive engineers	43.0	43.0
Locomotive firemen	17.2	14.0
Mechanics and repairmen	2,792.0	3,397.9
Airplane mechanics and repairmen	140.0	194.0
Motor vehicle mechanics	830.0	1,020.0
Office machine mechanics	80.0	128.0
Radio and television mechanics	132.0	163.0
Railroad and car shop mechanics	35.0	32.9
Other mechanics and repairmen	1,575.0	1,860.0
Other craftsmen and kindred workers	1,144.9	1,207.2
Bakers	101.0	104.0
Cabinetmakers	70.0	72.7
Cranemen, derrickmen, and hoistmen	145.0	179.0
Glaziers	21.0	30.0
Jewelers and watchmakers	35.0	34.7
Loom fixers	24.0	21.5
Opticians, lens grinders, and polishers	23.0	27.5
Inspectors, log and lumber	20.0	23.0
Inspectors, other	95.0	75.4
Upholsterers	63.0	65.0
Craftsmen and kindred workers, not elsewhere classified	547.9	574.4

Total national employment, by occupation, 1970 and projected 1980

(In thousands)

Occupation	1970 Employment	Projected 1980 requirements
Employment, total	78,627.0	95,085.0
Professional, technical, and kindred workers	11,140.0	15,500.0
Engineers, technical	1,081.2	1,498.1
Engineers, aeronautical	63.9	77.6
Engineers, chemical	50.9	59.3
Engineers, civil	179.9	235.6
Engineers, electrical	233.8	321.3
Engineers, industrial	115.7	187.7
Engineers, mechanical	206.7	276.8
Engineers, metallurgical	25.5	32.5
Engineers, mining	14.6	14.5
Other engineers, technical	190.2	292.8
Natural scientists	364.8	504.4
Chemists	118.3	166.9
Agricultural scientists	39.2	45.9
Biological scientists	49.9	70.6
Geologists and geophysicists	25.4	29.5
Mathematicians	48.6	71.7
Physicists	35.9	56.2
Other natural scientists	47.5	63.6
Technicians, except medical and dental	1,011.7	1,417.1
Draftsmen	309.5	435.9
Surveyors	51.2	68.2
Air traffic controllers	20.0	25.0
Radio operators	22.3	31.0
Technicians, other	608.7	857.0
Medical and other health workers	1,776.4	2,512.2
Dentist	96.7	127.6
Dietitians and nutritionists	30.0	37.4
Nurses, professional	688.7	983.0
Optometrists	17.5	21.0
Osteopaths	13.5	19.4
Pharmacists	128.8	139.8
Physicians and surgeons	266.0	395.0
Psychologists	33.2	56.0
Technicians, medical and dental	263.0	474.0
Veterinarians	24.0	33.0
Other medical and health workers	215.0	226.0
Teachers	3,072.0	3,382.0
Teachers, elementary	1,260.0	1,249.0
Teachers, secondary	1,015.0	1,081.0
Teachers, college	552.0	706.0
Teachers, other	245.0	346.0
Social scientists	63.2	87.0
Economists	25.0	36.0
Statisticians and actuaries	29.2	38.0
Other social scientists	9.0	13.0
Other professional, technical and kindred workers	3,770.7	6,099.2
Accountants and auditors	491.0	800.0
Airplane pilots and navigators	57.0	100.0
Architects	33.0	50.0
Clergymen	208.0	220.0
Designers, except design draftsmen	93.0	135.0
Editors and reporters	112.0	126.0
Lawyers and judges	286.9	342.0
Librarians	125.0	174.8
Personnel and labor relations workers	160.6	270.0
Photographers	65.0	72.0
Social and welfare workers	170.0	253.0
Workers and teachers in the arts and entertainment	750.0	909.0
Professional, technical, and kindred workers, not elsewhere classified	1,219.8	2,647.4
Managers, officials, and proprietors	8,289.0	9,500.0
Conductors, railroad	40.0	39.0
Creditmen	68.0	100.0
Officers, pilots, engineers, ship	34.0	32.0
Purchasing agents	167.0	185.0

Total national employment, by occupation, 1970 and projected 1980--Continued

(In thousands)

Occupation	1970 Employment	Projected 1980 requirements
Operatives and kindred workers	13,509.0	15,440.0
Drivers and deliverymen	2,510.0	2,900.0
Drivers, bus, truck, and tractor	1,855.0	2,150.0
Deliverymen, routemen, and cab drivers	655.0	750.0
Transportation and public utility operatives	142.0	137.0
Brakemen and switchmen, railroad	68.0	65.0
Power station operators	23.0	25.0
Sailors and deck hands	31.0	27.0
Semiskilled metalworking occupations	1,892.0	2,239.0
Assemblers, metalworking, class A	136.0	171.0
Assemblers, metalworking, class B	580.0	683.0
Inspectors, metalworking, class B	221.0	252.0
Machine tool operators, class B	310.0	336.0
Electroplaters	17.0	19.0
Electroplater helpers	25.0	30.0
Furnacemen, smeltermen, and pourers	60.0	64.0
Heaters, metal	8.0	9.0
Welders and flame-cutters	535.0	675.0
Semiskilled textile occupations	957.5	1,087.0
Knitters, loopers, and toppers	47.5	46.0
Spinners, textile	50.0	41.0
Weavers, textile	60.0	50.0
Sewers,and stitchers, manufacturing	800.0	950.0
Other operatives and kindred workers	8,407.5	9,077.0
Asbestos and insultation workers	25.0	34.0
Attendants, automobile service and parking	430.0	500.0
Blasters and powdermen	5.0	6.0
Laundry and dry cleaning operators	360.0	433.0
Mine operatives and laborers, not elsewhere classified	195.0	141.0
Meat cutters, except meat packing	190.0	200.0
Operatives and kindred workers, not elsewhere classified	7,202.5	7,763.0
Service workers	9,712.0	13,060.0
Private household workers	1,558.0	1,980.0
Protective service workers	968.0	1,300.0
Firemen	180.0	275.0
Policemen and other law enforcement officials	415.0	600.0
Guards, watchmen, and doorkeepers	373.0	425.0
Food service workers	2,231.0	2,781.0
Bartenders	160.0	200.0
Cooks, except private household	740.0	930.0
Counter and fountain workers	291.0	411.0
Waiters and waitresses	1,040.0	1,240.0
Other service workers	4,955.0	6,999.0
Airline stewards and stewardesses	35.0	65.0
Attendants, hospital and other institutions	830.0	1,500.0
Charwomen and cleaners	272.0	400.0
Janitors and sextons	828.0	1,100.0
Nurses, practical	370.0	670.0
Other service workers, not elsewhere classified	2,620.0	3,264.0
Laborers, except farm and mine	3,724.0	3,700.0
Farmers and farm workers	3,126.0	2,600.0

Source: U.S. Bureau of Labor Statistics, Tomorrow's Manpower Needs, Vol. IV, Revised 1971, The National Industry-Occupational Matrix and Other Manpower Data, Bulletin 1737, 1972 (Washington: Government Printing Office).

ECONOMY–MONROE COUNTY, FLORIDA

Monroe County and Key West, Florida have been subjected to large fluctuations in population and employment opportunities largely because of the importance of the federal government as an employer. The large fluctuations in Key West's population are attributed to the changes occurring in the activities at the Naval Base and Naval Air Station.

Key West itself has a most limited land area and is restricted from developing any industrial enterprise requiring a large amount of land. At present, only 93 acres or 2.8 percent of all developed land area is used by industry; the military uses 29 percent of the developed land. There are no large tracts reserved for industrial development in the immediate vicinity of Key West. Another limitation on Key West's growth is the difficulty in obtaining large supplies of water. In the late 1950's an 18 inch pipeline was constructed which conveys 6.5 million gallons per day at peak capacity. In addition to this supply the Stock Island desalination plant can provide 2,620,000 gallons per day.

Key West exists in isolation, being nearly 150 miles from Miami and there is no land area that is populated immediately surrounding Key West. Its markets are remote and transportation costs of its products, unless shipped by water, are high.

Key West, Florida has a very unique economic base in that its major activities are largely dependent upon influences beyond the control of the community. This city has had a "fluent and famine" economy throughout its history. The major activities in the Key West area are associated with the following:

(1) Military installations

(2) Leisure activities, tourism and retirement

(3) Commercial fishing

The employment profile of Monroe County shows the very large dependence upon the government and the service industry as employers.

The history of the Key West economy indicates that tourism is on the increase as can be seen by the following table. The number of tourists as reported by the Key West Chamber of Commerce increased from 177,407 in 1960 to 298,400 in 1971–a 68.2 increase.

In 1968 the American Automobile Association estimated that the average daily expenditure of couples on vacation was $36 per day. It has been estimated that nearly 56 percent of the employment in Key West and 44 percent of its income is derived from trade and services activities in 1965. Undoubtedly that income has increased and the percentage of employment in the industry has remained approximately the same to the present.

ANNUAL NUMBER OF TOURISTS VISITING KEY WEST

1960	177,407
1961	190,109
1962	215,027
1963	216,159
1964	219,053
1965	210,313
1966	227,587
1967	262,748
1968	247,854
1969	234,382
1970	268,810
1971	298,400

Source: Key West Chamber of Commerce

TOURIST TRADE, BY NUMBER OF TOURISTS ARRIVING BY AUTO MONROE COUNTY AND CITY DESTINATIONS: 1970

	1970
Number of Tourists	460,783
City Destinations	
Key West	268,810
"The Keys"	133,299
Other Cities	58,674

Source: State of Florida Department of Commerce
Florida Tourist Study, 1970

In educating and training Monroe Countians for the world-of-work it will be necessary to take into account the occupational needs of the Nation, the state, and especially the southeastern area of the state. Dade County itself is expected to have 1,600,000 persons by 1980. This county alone would provide employment for 755,200 persons if the pattern of the 1960's continues. Therefore, if the population of Monroe County continues to grow at the modest rate as projected, there will be a job market available to Monroe Countians in reasonable proximity to their homes. Of course, this may not be the most desirable situation, but it is practical.

The following table shows the employment changes that have occurred in Dade County within the decade 1960 to 1970.

TOTAL NON–AGRICULTURAL EMPLOYMENT, DADE COUNTY

	1960	1970	Percent Change 1960-1970
Total non-agricultural employment	352,094	588,900	67.3
Wage and Salary			
Manufacturing	41,623	78,700	89.1
Contract construction	24,297	33,300	37.1
Transportation, communication[a]	72,560	53,900	–25.7
Wholesale & retail trade	79,841	133,300	67.0
Finance, ins. & real estate	22,268	32,800	47.3
Services & misc.[b]	101,422	116,700	15.1
Government	26,816	58,000	116.3
Mining[d]	452	0	—
All other workers[c]	16,322	82,200	403.6

[a]Transportation, communication, electric, gas, and sanitary services.

[b]The Florida totals include a miscellaneous group of agricultural and similar service establishments, forestry, fishing and establishments not elsewhere classified.

[c]Includes non-agricultural self-employed, unpaid family workers, and domestics in private households.

[d]Mining is contained with "services and miscellaneous."

Source: State of Florida Department of Commerce
Division of Labor and Employment Opportunities

If the total employment in Dade County continued to increase from 1970 to 1980 by the same amount it increased in the last decade it would reach 836,038 persons by 1980. Non-agricultural employment would reach 825,706 by 1980 if it increased by the same amount it increased from 1966 to 1970.

All of southeastern Florida has experienced rapid growth and it is expected that this growth may continue throughout this decade. New residents create new markets and new employment

opportunities. Businesses created in the Key West area will find ready markets in Southeastern Florida. Emphasis should be placed in developing businesses that will be able to serve the growing southeast. Obviously the climate of southern Florida appeals to the retiree as well as the vacationer, and tourist and recreational business should be emphasized.

PROJECTED NON–AGRICULTURAL EMPLOYMENT, DADE COUNTY, FLORIDA

1980

	Projected 1980
Total non-agricultural employment	825,706
Wage and salary	
Manufacturing	115,777
Contract construction	41,703
Transportation, communication[a]	35,240
Wholesale & retail trade	186,759
Finance, ins. & real estate	43,332
Services & misc.[b]	131,978
Government	89,184
All other workers[c]	181,733

[a]Transportation, communication, electric, gas, and sanitary services.

[b]The Florida totals include a miscellaneous group of agricultural and similar service establishments, forestry, fishing, and establishments not elsewhere classified.

[c]Includes non-agricultural self-employed, unpaid family workers, and domestics in private households.

Source: State of Florida Department of Commerce
Division of Labor and Employment Opportunities

The majority of the employment opportunities in the county will be in the Key West area, especially if the naval base and air station continues in operation. If the military employment, including civilians, is decreased, the city must develop its leisure businesses and advertise extensively.

The following tables indicate the anticipated changes in the employment possibilities in Monroe County, Florida. The first table shows the changes in the employment picture from 1960 to 1970, classified by industry. The total number of persons employed in Monroe County by all industries increased 2,749 persons or 22.3 percent from 1960 to 1970.

It is interesting to note that the retailing industry had the largest amount of increase, 604 persons, or 41.8 percent; the construction industry was next in gain, its employment increased 423 persons or 52.4 percent. Eating and drinking places increased their employment 381 persons or 54.7 percent. Food and dairy products stores had 54.7 percent increase in employment, an increase of 280 persons. Just as is true nationally, the other categories of personal service employment increased a fairly large amount, 334 persons, or 28.9 percent above the 1970 employment level.

The agriculture, forestry and fisheries industry increased its total employment 60.8 percent, or by 346 persons. Most of this increase was due to the increase in the fisheries industry occasioned by the growth and development of the shrimp industry.

The mining industry is practically extinct in Monroe County; employment dropped from 13 to 5 persons from 1960 to 1970.

Public administration employment increased about 10.5 percent or by 188 persons; governmental educational service employment increased 184 persons or 33.5 percent. This again indicates the importance of governmental employment in the area.

EMPLOYMENT BY INDUSTRY, MONROE COUNTY, FLORIDA 1960 AND 1970

Industry	1960	1970	Percent Change
Both Sexes	12,324	15,073	22.3
Agriculture, forestry and fisheries	569	915	60.8
Mining	13	5	-61.5
Construction	808	1,231	52.4
Manufacturing	545	580	6.4
Furniture, lumber & wood	5	11	102.0
Metal industries	28	20	-28.6
Machinery, except electrical	8	11	37.5
Electrical machinery equipment & supplies	58	22	-62.1
Motor vehicles & motor vehicle equipment	-	n.a.	
Transportation equipment, except motor vehicle	76	61	-19.8
Other durable goods	61	135	121.3
Food and kindred products	144	50	-65.3
Textile & fabricated textile products	8	73	812.5
Printing, publishing & allied products	133	112	-15.8
Chemical and allied products	4	-	-
Other nondurable goods (including not specified manufacturing)	20	85	325.0
Motor vehicle retail & service stations	n.a.	391	
Railroad & railway express service	4	5	25.0
Trucking service & warehousing	72	164	127.7
Other transportation	332	309	-7.0
Communications	153	206	34.6
Utilities & sanitary service	346	459	32.6
Wholesale trade	172	292	69.7
Food and dairy products	305	585	91.8
Eating and drinking places	697	1,078	54.7
Other retail trade	1,444	1,657	14.8
Finance, insurance and real estate	510	595	17.1
Business and repair service	337	383	13.6
Private households	371	238	-35.9
Other personal services	1,152	1,486	28.9
Entertainment & recreation	236	301	27.5
Hospitals, including health	241	382	58.5
Health, except hospitals	n.a.	144	-
Education service - government	549	733	33.5
Private and other	149	147	-1.4
Welfare, religion and nonprofit membership	212	204	03.8
Other professional and related services	215	390	81.3
Public administration	1,797	1,985	10.5
Industry not reported	1,095	208**	-

* Included in other retail trade.

** 208 employed 14 and 15 years old.

All health.

Source: U.S. Census, 1960 and 1970.

In examining Monroe County's total employment by classified occupation, it is revealed that a total of 9,008 men were employed and 6,065 women. Approximately 34.5 percent of the women were employed clerks and in related occupations; 24.4 percent as service workers; 11.9 percent as professional and technical workers.

Women constituted 40.3 percent of the employed persons; 44.3 percent of the professionals; 76 percent of the clerical persons were women, as were 56 percent of the service workers.

EMPLOYMENT BY OCCUPATION, MONROE COUNTY, FLORIDA,
1960 AND 1970

Occupation	1960 Male	1960 Female	1960 Total	1970 Male	1970 Female	1970 Total	Percent Change of Total
Total	7,964	4,360	12,324	9,008	6,065	15,073	22.3
Professional, technical & kindred	596	574	1,170	884	723	1,607	37.4
Engineers	97	-	97	96	-	96	-1.1
Medical practioners & other health workers	54	105	159	103	131	234	47.2
Teachers, elementary & secondary	77	312	389	106	362	468	20.3
Other professional	368	157	525	579	230	809	54.1
Managers, officials & adm., except farm	1,225	407	1,632	1,415	341	1,756	7.6
Salaried	517	194	711	n.a.	n.a.	1,187	66.9
Self-employed	708	213	921	n.a.	n.a.	569	-38.3
Sales workers	499	443	942	566	691	1,257	33.5
Retail	233	376	609	268	558	826	35.6
Other than retail	266	67	333	298	133	431	29.4
Clerical and kindred	432	1,118	1,550	644	2,093	2,737	76.6
Craftsmen, foremen & kindred	1,669	29	1,698	2,107	104	2,211	30.2
Construction craftsmen	769	-	769	980	-	980	27.4
Mechanics & repair	494	-	494	509	-	509	3.0
Metal craftsmen, except mech.	85	-	85	52	-	52	-38.8
Other craftsmen	321	-	321	566	104	670	108.7
Operatives, except transport	536	207	743	490	227	717	-3.5
Durable goods manufacturing	24	8	32	50	13	63	96.9
Nondurable goods manufacturing	20	16	36	33	45	78	116.7
Nonmanufacturing industries	492	183	675	407	169	576	-14.7
Transport equipment operatives	402	n.a.	402	395	32	427	6.2
Laborers, except farm	1,031	8	1,039	1,083	40	1,123	8.1
Construction	207	n.a.	207	140	n.a.	140	-32.4
Freight, stock, & material handlers	38	n.a.	38	172	n.a.	172	352.6
Other, except farm	786	n.a.	786	771	40	811	3.1
Farmers and farm managers	24	-	24	43	19	62	158.3
Farm laborers and foremen	16	11	27	65	36	101	274.0
Service workers, except private house	750	832	1,582	1,137	1,482	2,619	65.5
Waiters, bartenders, cooks and counter	177	436	613	367	773	1,140	86.0
Protective	204	-	204	330	-	330	61.7
Other	369	396	765	538	611	1,149	150.2
Private household workers	21	310	331	12	236	248	-25.1
Occupation not reported	763	421	1,184	n.a.	n.a.	-	-
Workers 14 and 15 years	n.a.	n.a.		147	61	208	-

Source: U.S. Census, 1970.

Monroe County is expected to grow at a modest rate from 1970 to 1980. Various projections indicate that the total population of the county will range from 54,500 to 57,320. Assuming that the population of Key West will continue to bear the same relationship to the total population of the county as it did in 1970 (52.4 percent) the city could grow to a population in the range of 28,600 to 30,000. However, it should be pointed out that this projection is based on past population percentages and does not take into consideration the possible expansion of the Key West city limits which could markedly expand recreational and business activity.

Assuming that employment opportunities in the county will grow at about the same amount as they grew in the decade 1960 to 1970, the total employment opportunity for the county would increase to approximately 18,000. If the labor force participation rate continues to increase, and the population grows to the highest projection, employment could reach nearly 19,000.

PROJECTIONS OF THE POPULATION
MONROE COUNTY, FLORIDA
AS OF JULY 1 OF SPECIFIED YEARS
1972 TO 1980

	1972	1973	1975	1977	1979	1980
Monroe	53,000	53,200	53,600	53,900	54,300	53,500

Source: Bureau of Economics and Business Research
College of Business Administration
University of Florida

MONROE COUNTY PROJECTIONS

Employment requirements of Monroe County have been projected on the basis of changes in employment by industry and by occupational groups. In making the projections by industry, several assumptions were made. One projection is based upon the assumption that the same amount of increase in employment that occurred from 1960 to 1970 will continue to 1980.

The projection based upon the same amount of increase that occurred between 1960 and 1970 yields a total of 17,822 jobs in 1980. However, where the same method is applied to each of the major industry groupings, the total resulting from the aggregation of each group is 18,502 (Series I). A large part of the increase occurs in retailing and services industries; construction employment is expected to increase by approximately 400 persons.

Series II of the projections by industry is based upon the same percentage increase that occurred from 1960 to 1970. Again the largest increases in job requirements are projected for the retailing and service industries. This, of course, reflects the increasing reliance upon tourism as a source of revenue for the county. The total, when the various industry projections are aggregated, is 20,677. If the percentage of increase that occurred from 1960 to 1970 is applied to the 1970 total, the 1980 projection would be 18,434.

EMPLOYMENT BY INDUSTRY, MONROE COUNTY, FLORIDA
1960 AND 1970
WITH PROJECTIONS FOR 1980

Industry	1960	1970	Percent change	Projected 1980 Series I	Projected 1980 Series II
Both Sexes	12,324	15,073	22.3	18,502	20,677
Agriculture, forestry and fisheries	569	915	60.8	1,261	1,472
Mining	13	5	-61.5	0	2
Construction	808	1,231	52.4	1,654	1,877
Manufacturing	545	580	6.4	615	618
Furniture, lumber & wood	5	11	102.0	17	23
Metal industries	28	20	-28.6	12	15
Machinery, except electrical	8	11	37.5	14	16
Electrical machinery equipment & supplies	58	22	-62.1	0	9
Motor vehicles & motor vehicle equipment	-	n.a.			
Transportation equipment, except motor vehicle	76	61	-19.8	46	49
Other durable goods	61	135	121.3	255	299
Food and kindred products	144	50	-65.3	0	18
Textile & fabricated textile products	8	73	812.5	138	594
Printing, publishing & allied products	133	112	-15.8	91	95
Chemical and allied products	4	-	-	0	0
Other nondurable goods (including not specified manufacturing)	20	85	325.0	150	362
Motor vehicle retail & service stations	n.a.	391			
Railroad & railway express service	4	5	25.0	5	7
Trucking service & warehousing	72	164	127.7	256	374
Other transportation	332	309	-7.0	286	288
Communications	153	206	34.6	259	278
Utilities & sanitary service	346	459	32.6	572	609
Wholesale trade	172	292	69.7	412	496
Food and dairy products	305	585	91.8	865	1,123
Eating and drinking places	697	1,078	54.7	1,458	1,668
Other retail trade	1,444	1,657	14.8	2,652*	2,904
Finance, insurance and real estate	510	595	17.1	680	697*
Business and repair service	337	383	13.6	429	436
Private households	371	238	-35.9	105	153
Other personal services	1,152	1,486	28.9	1,820	1,916
Entertainment & recreation	236	301	27.5	366	389
Hospitals, including health	241	382	58.5	811	1,147
Health except hospitals	n.a.	144	-	#	
Education service - government	549	733	33.5	917	979
Private and other	149	147	-1.4	145	145
Welfare, religion and nonprofit membership	212	204	03.8	196	197
Other professional and related services	215	390	81.3	565	708
Public administration	1,797	1,985	10.5	2,173	2,194
Industry not reported	1,095	208**	-		

* Included in other retail trade.

** 208 employed 14 and 15 years old.

\# All health.

Source: U.S. Census, 1960 and 1970.

Projecting total employment without regard for individual occupations yields a lower figure than if each individual occupation is projected and then these are aggregated. If total employment in Monroe County would increase by the same amount between 1970 and 1980 as it did from 1960 to 1970 it would reach 17,822 persons.* When each of the major professions increased by their respective amounts of increase from 1960 to 1970, the total employment projection for 1980 becomes 18,590 persons.

Professional and allied workers will increase to 2,044 from 1,607 in 1970, an increase of 437 persons. The largest portion of the increase will occur in the medical practitioners and health professions, and the largest amount of the increase will be in the allied health professions. The increase in the number of teachers will be closely associated with the increase in population, but the minimum increase should be 79 additional teachers. Other professional worker employment will increase by 284.

Approximately 124 additional business managers and administrators will be needed. The total number of sales workers will increase by 315 and 217 of these will be retail sales clerks.

The largest single amount of increase will be among clerical employees, 1,187; craftsmen and kindred workers requirements will increase 513 of which 211 jobs will be in the construction trades.

If the trend continues, there will be a decrease in the number of operatives required; there will be an increase of approximately 50 jobs in manufacturing, but a decrease of at least 99 in non-manufacturing activities.

The number of job opportunities as transportation equipment operators, laborers, farmers farm managers, farm laborers and foremen will increase by 221 over the 1970 employment.

Service worker employment will increase to 3,656 persons if this employment grows by the same amount as it did from 1960 to 1970. The largest portion of the increase in this category will be among waiters, bartenders, cooks and counter personnel (527). Private household worker requirements will continue to decrease.

*According to the 1960 Census the occupation for 1,184 was not reported; in 1970 the total employment figure included 208 persons 14 and 15 years old.

EMPLOYMENT BY OCCUPATION FOR MONROE COUNTY, FLORIDA
1960 AND 1970 AND PROJECTIONS FOR 1980

Occupation	1960	1970	Projections, 1980 Series I	Series I	Series III
Total	12,324	15,073*	18,590	18,434	22,553
Professional	1,170	1,607	2,044	1,967	2,249
Engineers	97	96	95	118	95
Medical practioners & other health workers	159	234	309	289	344
Teachers, elementary & secondary	389	468	547	573	563
Other professional	525	809	1,093	989	1,247
Managers, officials & adm., except farm	1,632	1,756	1,880	2,148	2,332
Salaried	711	1,187	1,663	1,452	1,981
Self-employed	921	569	217	696	351
Sales workers	942	1,257	1,572	1,529	1,678
Retail	609	826	1,043	1,004	1,120
Other than retail	333	431	529	525	550
Clerical and kindred	1,550	2,737	3,924	3,349	4,834
Craftsmen, foremen & kindred	1,698	2,211	2,724	2,704	2,203
Construction craftsmen	769	980	1,191	1,198	1,249
Mechanics and repair	494	509	524	622	524
Metal craftsmen, except mech.	85	52	19	65	32
Other craftsmen	350	670	990	820	1,398
Operatives, except transport	743	717	691	877	780
Durable goods manufacturing	32	63	94	77	124
Nondurable goods manufacturing	36	78	120	95	165
Nonmanufacturing industries	675	576	477	705	491
Transportation equipment operatives	402	427	452	522	453
Laborers, except farm	1,039	1,123	1,207	1,374	1,709
Construction	207	140	73	172	95
Freight, stock, & material handlers	38	172	306	211	778
Other, except farm	794	811	828	991	836
Farmers and farm managers	24	62	100	76	160
Farm laborers and foremen	27	101	175	124	378
Service workers, except private house	1,582	2,619	3,656	3,209	4,334
Waiters, bartenders, cooks and counter	613	1,140	1,667	1,396	2,120
Protective	204	330	456	404	534
Other	765	1,149	1,533	1,409	1,726
Private household workers	1,331	248	165	302	185
Occupation not reported	1,184	n.a.			
Workers 14 and 15 years	n.a.	108		253	258

*Includes 208 14 and 15 year old persons.

Source: U.S. Census, 1960 and 1970.

If the total employment requirement is projected (as in Series II), using the same percentage increase that occurred between 1960 and 1970, the job requirements for 1980 will be 18,434 persons. Series II projections, when allocated on the same percentage importance as the various sub-groups have been, the total in 1970 will be somewhat different from the projections based upon the same amount of increase. For example, in Series I the total number of professional and related occupations would be 2,044, while in Series II, 1,972 persons would be in this category. Each occupation will vary somewhat as to the number of jobs required. The largest difference is between the projections of service worker requirements.

A third projection, Series III, is an aggregation of individual sub-group projections based upon the extension of the same percentage increase that occurred from 1960 to 1970. This yielded a much larger total than Series I or Series II employment requirement, 22,553 as contrasted to 18,510 and 18,434. Each job category projection will be larger than the other projection.

It is entirely likely that the employment figure could reach 22.5 thousand if the economy is expanded.

THE ROLE OF VOCATIONAL-TECHNICAL EDUCATION IN FLORIDA'S ECONOMIC DEVELOPMENT

Population, Manpower Development and School Enrollments

The purpose of this section will be to prove one area of influence, namely, the impact of public vocational-technical education on Florida's economy. Although emphasis will be on the economic aspects only, it is not intended to imply that it is the only or most important contribution of education and training to society. To achieve the general purpose indicated, the public vocational-technical school segment of Florida will be examined as:

1. Formally organized units to which the people of Florida allocate specific economic resources to attain certain objectives.
2. Contributors to the stream of income and purchasing power within the state.
3. A means of increasing the state's supply of capital which can be used to encourage further economic growth in Florida by raising the productive skills characteristic of an educated populace as well as by minimizing the social costs and ills of ignorance and poverty.

In order to verify past trends and potential educational requirements for the active and inactive population, the data on educational attainment were examined. There is a certain circularity of "feed-back" between present and projected educational attainments. This examination of the educational attainment levels of Florida's population, present vs. future, provides information as to what minimal "output" or effort of the educational system is required to meet the needs of this continuous upgrading of the education process.

The overall bearing of recent manpower projections is to suggest that, whatever the particular combinations of priorities the state adopts in the next ten years, planning for manpower needs in the 1980's must reckon with the impact of pursuit of our priorities as a dynamic influence for manpower requirements. The growth in demand in the next ten years for technicians, nurses, and hospital attendants, for example, is very likely to reflect the vigor with which Florida pursues its goals. Increasing the supply of manpower in these areas can be expected to involve a massive expansion in facilities and enrollments in vocational-technical education.

Preparation for rapidly expanding new occupations can be expected to involve a shift in emphasis in vocational education from non-theoretical skill training offered in area vocational-technical schools to two-year post-high-school institutions offering programs combining basic education with technical studies.

POST-HIGH-SCHOOL FTE STUDENT ENROLLMENTS* IN OCCUPATIONAL EDUCATION FOR COUNTY-BASED AND COMMUNITY JUNIOR COLLEGE PROGRAMS

Year	County Based Programs		Community Junior Colleges		Total	
	FTE	%	FTE	%	FTE	%
1963-64	9,612	78.2	2,684	21.8	12,296	100.0
1969-70	15,510	44.3	19,508	55.7	35,018	100.0
1979-80	33,534	41.7	46,923	58.3	80,457	100.0

*Figures for 1963-64 and 1969-70 are actual; figures for 1979-80 are projected.

The county-based share of the total occupational enrollment decreased from more than three-fourths to less than one-half. During this same period, occupational enrollments in the community junior colleges increased more than six times from a relative share of less than one-fourth to more than one-half.

Projections for such occupational enrollments to 1979-1980 have been prepared by the Division of Vocational-Education and the Division of Community Colleges of the Florida State Department of Education. Such projections as shown in the table, indicate the increase in total occupational enrollments, with the community junior colleges accounting for an even greater percentage of the total.

Much of the increase in manpower needs, especially in urban areas, stemming from the inter-related forces of economic growth and pursuit of the state's goals in the next decade will represent requirements for blue collar and service workers, and for white collar employees in occupations for which college attendance is not necessarily the prerequisite.

Somehow, the system of vocational training and technical education must provide a continuous educational spectrum to match the continuous occupational spectrum.

Regarding occupational and educational relationships, three points should be stressed:

First, if the educational planner wants to adjust the curricula in response to technological changes, planning strategies and activities not only must throw new light on the efficiency of

firms with regard to their personnel policies, but also must take a comprehensive look at educational qualifications, the cost of education, and the problem of poor utilization of educated labor in various segments of industry.

Second, to be realistic, educational planning which involves the use of detailed occupational and educational data must review its outdated approach in terms of rigid educational requirements for occupations. Research shows, for example, that in engineering jobs no single educational qualification or educational "avenue" stands out as the "optimum" education for that particular occupation.

Finally, the administrator in charge of curriculum revisions must realize that firms invest in their educated labor in much the same way as in their physical capital. Inquiries showed that large manufacturing firms in Florida, for instance, plan the use of highly qualified personnel in the same way as they plan the use of capital. These companies have recognized that it is of the utmost importance to predict the rate of progress of automation and the accompanying changes in skill input. Within the framework of what sometimes is called "active labor planning" these firms already have worked out plans to predict the employment at various skill levels that will be required in the future.

A population projection prepared with the assistance of the Bureau of the Census predicted that the 1975 Florida population would be 7,522,000 or 52.5 percent higher than in 1960. This projection estimates that the Florida school age population will increase by 52.3 percent or at almost the same rate as the population as a whole. The public elementary and secondary school age group can be defined as those between the ages of five and seventeen. This should not obscure the fact that the secondary school age group (ages 14-17) will grow at a faster rate (79.9%) than the population as a whole during the present decade.

It can be concluded that public elementary and secondary school enrollments in Florida will continue to increase at about the same rate as the population during the present decade. This would be similar to that increase rate noted in the 1920 to 1930 decade. It is cautioned that this is a conservative estimate and that Florida's growth pattern has been noted for exceeding conservative estimates in past years. The high school enrollments will grow at a rate faster than the population as a whole and the elementary enrollments will increase somewhat slower. Looking ahead even further, there is a great probability that the enrollment growth in the 1970's will eclipse that for the 1960's. Clearly, then, on the basis of sheer numbers of students who will present themselves for schooling, the resources allocated to the public education from whatever governmental agency must continue to increase.

Contributions of Vocational-Technical Education to Florida's Economy

Short-run Effects

The short-run impact of education and training on the economy can be measured in terms of the total expenditures for education in a given period. The salaries paid to teachers and other school employees are a part of the stream of income and purchasing power in the state. It should be pointed out that in 1970 the total payments for the services of public elementary and secondary school teachers alone were in the neighborhood of $520 million. In many counties of Florida the public school payroll is the largest single payroll. Adding the amounts paid to junior college and area vocational-technical center personnel to this would bring the total in excess of half a billion dollars entering the stream of income and purchasing power in the state of Florida.

There are other short-run phenomena which indicate the close relationship between vocational-technical education and the state's economy. To begin with, the prices the school system must pay for the goods and services it needs to operate are set in the private sector of the economy. Likewise, the effect of inflation in the private economy has an impact upon the public school system as well. Teachers' salaries are regulated to some degree at least by alternative employment opportunities in both the public and private sector. The public's attitude toward the state of the economy and subsequent willingness to provide additional resources to public schools may be affected by a successful or a poor citrus crop and a booming or a slow tourist season. In other words, what happens in the private sector of the economy subsequently will influence events in the public sector.

There is an additional short-run impact from withdrawing resources from the private sector of the economy to support public education. Taxes reduce the purchasing power of an individual. Taxes which support public institutions may reduce the immediate consumption of specified goods and services or reduce the propensity to invest. But this is an individual phenomenon. The lion's share of these taxes is used to pay salaries and, therefore, give buying power to instructional and non-instructional personnel. In other words, reducing the power of consumption for some through taxation increases that power for others.

The effects of technological change on employment generally are measured by the rate at which productivity increases. Concern with the impact of technological change has been responsible for much of the discussion of "the manpower revolution" or "automation" in recent years. Many persons who have observed the rapid advances in computer technology and in cybernetics, have become apprehensive that productivity will grow so rapidly in the next decade that a far smaller volume of employment would be needed to produce the trillion dollar-plus GNP anticipated

in the mid-1970's. Most of the persons displaced would be unskilled operatives and laborers, although technical advances in such fields as inventory control could reduce employment for white collar workers as well.

There are several factors which can be expected to influence employment opportunities in the next decade; these would include the influence of more widespread educational opportunity and attainment, the impact of rising family incomes and greater leisure, and the manpower needs generated by pursuit of our nation's priorities. All of these factors interact with one another to produce Florida's occupational pattern.

Long-run Effects

It is unlikely that technological change, and especially the computer oriented technologies, will alter the broad trends in the distribution of employment in Florida. Some of the changes in manpower requirements probably will be due to the greater importance attached to education. The educational level in Florida has been increasing rapidly in the past two decades and this increase is likely to continue.

The significance of rising levels of educational attainment can be summarized in the expression that "supply creates its own demand." As the supply of well-educated, or better-educated persons increases in virtually all occupational fields, the greater availability of these persons to employers becomes an important factor in raising entrance requirements for many types of jobs. The college degree supplants the high school diploma which was regarded as the entrance requirement for the more responsible white collar positions a generation earlier. Graduation from high school becomes a prerequisite for advancement to foremen's jobs or for most types of work dealing with the public. It is difficult to determine the extent to which these higher educational qualifications represent functional requirements for performing a job, but insofar as they become prerequisites for employment, they serve to increase the penalties for lack of formal schooling.

Skilled labor requirements are high where there is a rapid economic growth based on improved technology. The real, long-term solution to the problem of chronic unemployment is a comprehensive system of public education from kindergarten level through adult education. This implies that the usual approach of advertising an abundant supply of cheap but unskilled labor as a means of attracting new industries is becoming more questionable each year. The

need or demand for abundant but fundamentally ignorant or unskilled workers is declining rapidly. An educated populace and a supply of informed and skilled personnel may be the key to the future economic growth through the attraction of new industries. This places new and growing importance on our system of vocational-technical education.

Summary

The major findings and recommendations are as follows:

1. Dissatisfaction with the "school output"

Industrial management in Florida is dissatisfied with the work preparation students are receiving in many vocational programs. The president of a large firm, in defining what he expects from the public schools, put it this way: "Schools should challenge students to excel; the conventional curriculum simply is not sufficient to produce an educated labor force in the light of technological changes." A more specific criticism was that youth enter industry with underdeveloped skills in mathematics and human relations. Students must be prepared to adjust to at least three occupational changes in a lifetime; thus, the public school curriculum should respond to the nature of rapid technological change and the high mobility of contemporary American students.

In view of the anticipated inter-occupational shifts, vocational education must lose its single-job-oriented character.

2. Special programs in new fields are needed

The heavy demands of industry for more skilled employees, and the accompanying impact of this phenomenon on the public schools, will not require a complete reversal of emphasis from the academic to the vocational, but it will require some sharp changes. Especially, training for general service skills such as clerical, and special preparation in highly developed new fields such as chemical technology and electronics, should be accelerated.

3. Work-oriented programs for all students are needed

In view of the fact that half of Florida's youth does not continue on to higher education, the secondary schools in combination with the junior colleges should offer more work-oriented education.

It is further suggested that such occupational education be offered to all secondary school students, either through new technical education centers or in collaboration with junior college programs.

Many employers spoke at length on the subject of deficiencies in secondary education. Over 80 percent of the respondents held the strong opinion that most students leave high school today with "serious" deficiencies which restrict their potential for career development in industry. These deficiencies were described as the underdevelopment of the traits of ambition, initiative, responsibility, self-discipline, and planning. This syndrome of character weakness was said to lead to a behavior pattern in which the young employees seek routine jobs where the break-in period is short and a fairly high pay is soon achieved.

*Data in this section of the report were developed by Richard H.P. Kraft, Ph.D., Associate Professor, Department of Educational Administration, College of Education, Florida State University, Tallahassee, Florida.

Dr. Kraft has worked extensively with the Florida State Department of Education, Bureau of Economic and Business Research and related research organizations. His data are obtained from recognized sources and from his own research in the area of vocational-technical education.

Selected references provided by Dr. Kraft are listed on page 17.

MONROE COUNTY--Problems and Opportunities
with Emphasis on Vocational-Technical and Career Education

Beginning at the southern tip of the Florida peninsula, Monroe County stretches south and southwest for 113 miles. It comprises a chain of islands (Keys), ranging in width from less than a mile to more than fourteen miles, separating the waters of the Gulf of Mexico and the Atlantic Ocean. Except for the Aleutian Islands off the coast of Alaska, there is no other place in the United States even similar to the Keys. When one considers its subtropical climatic characteristics, in addition to its physical features, Monroe County emerges as a unique place to live, work, and play.

But because of its uniqueness, which certainly is desirable in terms of scenic beauty, almost perfect weather conditions in any time of the year, and the consequent attraction these two natural resources have for tourists, Monroe County must contend with several peculiar problems; a single, unusually hazardous, extremely congested two-lane highway system which trucks, busses, and automobiles must share as the primary supply and transportation link between the Keys; a soil unsuited to agriculture, making food supply, other than seafood, mandatory from outside sources; a lack of an abundant fresh water supply, a fact which not only causes high water rates, but which places a natural limitation on the amount of additional residential and business-oriented construction; and an economy based upon the unsteadiness of commercial fishing (mostly shrimping) and the seasonal fluctuations of tourism. It appears as though the military, (which, until the late 1960's played the dominant role in the economy of Monroe County, especially in the lower Keys) will continue to be a significant economic force and even if reductions or fluctuations occur there is every evidence that the economy will prosper.

In addition to the problems mentioned above, Monroe County has a slowly but steadily increasing population (estimated by the Florida State Department of Commerce to be a little less than a one percent growth per year), which is continuing to approximate the already existing economic characteristics of the resident population--a small, affluent, independent, predominately retired group with outside sources of income, who locate primarily in the upper and middle Keys; and a large unskilled (or incorrectly skilled, as far as the Keys are concerned) segment of people which choose to reside in the lower Keys, the largest number of whom are within the immediate Key West area. Here they find lower cost housing; a generally friendly, multi-cultural milieu; services and shopping facilities which only a city can provide; a diversified, though service-oriented economy

within which at least low-paying jobs are available; an "easy-to-get-around-in" small area; and a perceptibly relaxed, informal, slow paced social environment. Here they live, enjoying the almost constantly balmy weather and the fishing opportunities. Their income is low, but the climate to them is a far more satisfactory item than an abundance of material goods. Things, however, are not getting better. Monroe County has the climate, the scenery, the natural resources for abundant recreational and tourist-oriented activities, but its potentially productive human resources are ill-trained and unprepared for the future.

Evidence of Needs

Educational and Professional Systems conducted four County-wide surveys of target populations residing within Monroe County. (Copies of each of the survey instruments can be found in the appendix of this report). One survey was made of a statistical random sample of the residents (N=400). Another was made of a sample of the businesses employing four or more people within the County (N=74). Another survey was made of the teachers and administrators employed by the public school system and community college (N=331). A final survey was done of students who had taken vocationally-oriented courses and who had recently graduated from the public school system (N=300).

The first two surveys, the residential and employer surveys, were conducted by face-to-face interviews. The other two surveys were done by mail.

Using Federal Census Data, augmented by data furnished by the Florida State Department of Commerce and the Monroe County Public School System, the following four tables were developed: Table 1, revealing the educational characteristics of the population; Table 2, revealing the average daily school membership from 1968-1972; Table 3, revealing the employment characteristics of the population; and Table 4, revealing basic labor market information for the years 1968 through 1971. (The Florida State Department of Commerce has not, as of this writing, completed its Basic Labor Market Information for 1972.)

In studying Table 1, the undereducation of Monroe County residents becomes abundantly clear. The Table shows that 55.9% of the male population has graduated from high school. Put another way, however, that means that nearly 46% has not. Within the high productivity span of 20 to 49 years old, approximately 3,600 males had less than a high school education in 1970. Nearly 44% of the female population has not acquired a high school education.

TABLE 1
MONROE COUNTY EDUCATIONAL CHARACTERISTICS OF THE POPULATION–1970

School Enrollment:	
Total Enrolled 3 to 34 years old	11,769
Nursery School	304
Kindergarten	794
Elementary	7,361
High School	2,668
College	662
Years of School Completed for Males 25 Years Old and Over:	
No school years completed	191
Elementary: 1 to 4 years	538
5 to 7 years	1,366
8 years	1,487
High School: 1 to 3 years	2,714
4 years	4,910
College: 1 to 3 years	1,501
4 years or more	1,565
Years of School Completed for Females 25 Years and Over:	
No school years completed	153
Elementary: 1 to 4 years	442
5 to 7 years	1,178
8 years	1,241
High School: 1 to 3 years	3,048
4 years	5,210
College: 1 to 3 years	1,537
4 years or more	1,004
Percent High School Graduates:	
Male	55.9%
Female	56.1%
Years of School Completed for Selected Age Groups:	
Males 20 to 49 years old	
No High School	1,368
High School 1 to 3 years	2,241
High School 4 years	6,028
College, 1 year or more	3,041
Females 15 to 44 years old	
No High School	1,075
High School 1 to 3 years	3,042
High School 4 years	4,284
College, 1 year or more	1,824

Average daily public school membership from kindergarten through high school has continued to grow over the years. Table 2 shows that the growth rate has been higher in the upper Keys. However, when one considers that the enrollment in the public schools of the lower Keys has also risen despite the continued loss of children from military families, then it appears that the lower Keys have actually matched or exceeded the actual civilian family increase of the upper Keys. This, coupled with the fact that the less affluent families already reside in, or tend to migrate to the lower Keys, further substantiates that the critical educational needs of Monroe County are, will remain, and continue to be within the geographic area of Rockland Key and Key West.

In looking over Table 3, "Monroe County Population Characteristics," sobering facts come to light. Though the table was derived from county-wide data, one must remember that 75% of the Negro population and 85% of the Spanish language population reside within the city limits of Key West. The tremendous disproportionate share of unemployment borne by the young Negro male below twenty years old explains, at least in part, the suspicious, and open hostility found by E.P.S. interviewers as they worked in predominately Negro residential areas of Key West. Racial hostility is obvious; unemployment is also obvious; training needs are not so obvious, however, until one is aware of the high drop-out rate in the public schools for the Negro males sixteen years of age and over. Those who drop out cannot find satisfactory employment, do not, for the most part, enter vocational training programs, and instead spend their day listlessly in their homes or on the streets. Vocational training with guaranteed placement of all graduates is a must and a first step in relieving the frustrations of this presently unemployable group.

Though the data in Table 4 are nearly two years old, E.P.S., on the basis of informal discussions with local business leaders, believes them to be substantially accurate for December, 1972. However, due to a steadily increasing young, transient, jobless, affluence-rejecting population, migrating from all over the United States, the unemployment figure was probably closer to 2000 as the year 1972 ended. If this transient migration continues–and there is no evidence that such might not be the case–it will constitute an increasingly larger nucleus of untrained, therefore relatively unemployable people, many of whom live on the streets and vandalize to support a drug habit. These people are now major recipients of community welfare services and the national food stamp program. Many are in need of social rehabilitation and eventual vocational training. Few are to be found in the middle and upper Keys. They reside mainly in the Rockland Key-Key West area.

TABLE 2

MONROE COUNTY AVERAGE DAILY PUBLIC SCHOOL MEMBERSHIP K-12

	1968–69	1969–70	1970–71	1971–72
Coral Shores	1065	1215	1307	887
Douglass	--	--	526	498
Exceptional Child	87	14	31	59
Glynn Archer Jr. High	701	696	795	856
Harris	604	543	618	604
Horace O'Bryant	1163	1103	980	985
Key Largo	--	--	--	620
Key West High	1676	1721	1697	1691
Marathon	597	668	745	844
May Sands	--	83	84	79
Memorial Elementary	859	809	--	--
Poinciana	781	763	797	780
Reynolds	192	212	158	165
Sigsbee	953	872	925	874
Stanley Switlik	--	--	--	605
Sue Moore	391	345	352	206
Sugarloaf	396	409	421	435
Truman	906	679	699	703

Trends in total school enrollment in three major keys areas over the years 1968 through 1972:

	Upper Keys	Middle Keys	Lower Keys
1968-69	1,065	988	7,873
1969-70	1,215	1,013	7,904
1970-71	1,307	1,097	7,731
1971-72	1,446	1,149	7,736

TABLE 3

MONROE COUNTY POPULATION EMPLOYMENT CHARACTERISTICS

Percent of Males in Labor Force by Age:

	All Males	Negro Males	Males of Spanish Language
14 and 15 years	18.0	12.7	15.1
16 and 17 years	35.2	19.7	41.0
18 and 19 years	75.5	44.7	72.3
20 and 21 years	96.9	91.6	91.1
22 to 24 years	95.2	96.8	87.1
25 to 34 years	97.1	87.8	97.2
35 to 44 years	93.5	91.8	87.2
45 to 64 years	73.7	78.0	80.5
65 years and over	19.1	15.9	10.0

Percent of Females in Labor Force by Age:

	All Females	Negro Females	Females of Spanish Language
14 and 15 years	8.4	5.1	4.4
16 and 17 years	29.2	14.7	28.6
18 and 19 years	39.5	61.3	35.3
20 and 21 years	52.4	48.4	82.8
22 to 24 years	45.5	50.0	45.2
25 to 34 years	39.6	65.6	36.3
35 to 44 years	43.7	59.9	46.9
45 to 64 years	37.3	54.5	29.9
65 years and over	10.5	17.7	4.4

TABLE 4

MONROE COUNTY BASIC LABOR MARKET INFORMATION

	March 1968	March 1969	March 1970	March 1971
Civilian Labor Force	15,840	17,740	17,780	17,320
Unemployment	260	300	420	600
Unemployment Rate	1.6%	2.4%	2.4%	3.5%
Employment	15,580	17,740	17,780	17,320
Non-agriculture Wage and Salary:	12,940	14,480	14,700	14,020
Manufacturing	480	640	460	500
Construction	900	1,000	780	700
Transportation, Communication, Gas and Sanitary	640	640	660	680
Trade	3,380	3,460	3,860	3,740
Finance, Insurance, and Real Estate	460	460	500	500
Services and Miscellaneous	3,280	3,340	3,740	3,160
Government	3,800	4,940	4,700	4,740
All Other Non-agricultural	2,600	2,920	2,620	2,660
Agriculture	40	40	40	40
Total Population	62,000	52,300	52,600	52,800

Source: Florida State Department of Commerce

An analysis of the empirical data gathered in the E.P.S. controlled surveys reveals the following:

Significant Aspects of the Residential Survey

Out of an attempted 400 interviews of a statistical random sample of the Monroe County population, 311 were actually completed. Suspicion of and hostility to interviewers within the lower keys area was the major reason eighty-nine of the questionnaires were returned with sketchy, incomplete and useless information. Although E.P.S. interviewers talked primarily to one person per questionnaire, most of the questionnaires reflect the thinking of families of two or more persons, since the interview was normally conducted within an individual's home during the late afternoon and early evening. Conservatively, then, at least 622 people were included within the random sample.

Of the 311 primary respondents who completed the survey form in a face-to-face interview, 247 were white American, 40 were Spanish American, 22 were Negro American, and 3 were of some other national origin. More than 80 percent of the respondents were not native to Monroe County. Sixty-five percent had come from another state, the rest from another part of Florida or another country. Fifty percent had lived within the County fewer than three years. Close to thirty pecent had been in the County less than one year. These data seem to substantiate the feeling of most County leaders that Monroe County is growing at a far faster rate than any outside agency has yet been able to detect.

More than sixty-five percent of the respondents had never received any vocational- technical training. The other thirty to thirty-five percent had received training in diverse occupations, but predominantly in home economics, typing, electronics, auto mechanics, and other secretarial oriented work.

A little less than half of the 311 households were supported by a husband with one job. In forty-one households both the husband and wife were employed. Twenty-five of the respondents were retired. Fifty-three respondents said they had been without a job for the previous four weeks or more. This unemployment figure represents more than seventeen percent of the sample. Aside from such reasons as sickness, physical disability, seasonal variation, and being laid off, the major unemployment reason given was "can't find a job." This at first seems inconsistent with data found in the E.P.S. survey of businesses. Of the seventy-four businesses surveyed, sixty-five reported that they had at least some difficulty finding qualified employees. It, therefore, appears that those who "can't find a job" simply do not have the training necessary to get a job.

More than forty percent of the respondents were not definitely sure they were satisfied with their present job. Of those, many wanted jobs for which they were unskilled. The desired jobs mentioned, such as diesel mechanic, hospital work, boat repair, construction-oriented occupations, cosmetology, and others, are all available within the County.

One hundred twenty-nine of the households had members still in school, mostly in the elementary grades of the public school system. Twelve household members were attending Florida Keys Community College. Eight were being trained in some phase of the public school vocational program.

Two hundred five of the respondents were not aware of the vocational-technical training programs available to them in the County. They expressed surprise that such programs existed. Of those who did express an opinion about the vocational-technical program, five stated that tney felt the programs to be generally inadequate, forty-five said it was "fair", sixty-five said it was "good", and eleven said it was "excellent."

Of the one hundred eleven respondents who said they had received some form of vocational-technical training, either in or out of the County, only forty-five replied that the training helped them get a job. Since sixty-six of the respondents did not believe that vocational-technical training had been a valuable experience for them, this signifies that the vocational-technical programs are getting the worst publicity possible, the publicity generated by the "dissatisfied customers," who, unfortunately, seem to represent the bulk of the vocational-technical students. One hundred percent placement of its graduates should be the goal of all vocational-technical courses, unless those courses are offered for jobs available only outside the County, or for purely hobby-oriented reasons. Vocational counseling, placement, and follow-up counseling should be an integral part of services offered to all students of the vocational-technical training program.

When asked what jobs they considered to be undesirable, most respondents listed such categories as hard labor, office, factory, restaurant, and domestic work. Since, except for factory work, these jobs are not only necessary, but available in the Monroe economy, an improvement in the status of such vocations would be a worthwhile venture. It can be done over time, but it will take a massive value re-orientation within the public educational system, beginning with the teachers and students in the elementary grades and continuing through the community college, adult education, and vocational-technical programs. Dignity and respect for the world of work is best acquired during maturation, rather than after maturation, and teachers, books, and course curricula which do not reflect such dignity and respect are a hindrance to the future happiness of the students.

Of the seventy-three respondents who thought their present lack of training or education had held them back from future job opportunities, and of the eighty-three who said they would be interested in a vocational-technical training program, thirty-two said they could attend from two to six hours per week. Twenty-six could devote as much as six to ten hours per week. Others could either devote more time or could not set aside a specified number of hours for such training. Women tended to favor morning or afternoon hours, and men generally wanted to attend in the evenings.

When the respondents were asked what they liked best about the Keys, most listed the weather or climate. This was followed, in order of occurrence, by such things as water-oriented recreational activities, the friendliness of the people, the pollution-free, non-urbanized environment, and the slow pace of living. When asked, however, what they considered to be the most important problems of the Keys, the respondents were divided. Those in the upper Keys tended to list bugs, the dangerous highway, high utility rates, high living costs, poor shopping facilities, and the lack of adult and youth oriented entertainment opportunities. The population of the middle Keys seemed more concerned about bridge repairs, unreliable, high-cost utilities, and the tendency toward unplanned and overemphasized commercial development. In the lower Keys, high utility rates were also listed, but the major concern seemed to be drug problems, drug-related crime, government, unemployment, race relations, police protection, and sub-standard housing.

On a County-wide basis, close to eighty percent of the respondents were satisfied with the Keys as a place to live. Those expressing dissatisfaction tended to be from military families eager to go home. More than eighty-seven percent of the respondents considered vocational-technical instruction a worthwhile endeavor for public education systems. The small minority which did not support the idea that vocational-technical instruction was worthwhile listed diverse reasons mostly having to do with cost, reasons such as "it should not be provided at the tax payer's expense," or "...the schools cannot afford the expensive equipment necessary." Some few did not want the County to train people for out-of-County work, or did not want a skilled population which would in any way encourage new industry, and, in turn, ruin the ecology of the Keys.

Significant Findings of the Employer Survey

Of the seventy-four businesses surveyed, eight were directly involved in marine activities; seven were exclusively dependent on tourism; thirty-six were service oriented; twenty-three of the businesses could not be placed in any particular category. The businesses surveyed comprised a selected random sample of all businesses in Monroe County that employed four or more persons. Four of these businesses employed more than one hundred workers; six employed from fifty-one to one hundred; twenty-seven employed from eleven to fifty; and the rest employed fewer than eleven.

The list of job titles of the employees was impressive. Beginning with the most frequently mentioned titles, the list ran as follows:

Title	No. of times mentioned	Title	No. of times mentioned
Laborers and Helpers	21	Office Managers	19
Bookkeepers	17	Secretarys	16
Mechanics	15	Plant Managers	14
Clerks	14	Maintenance Personnel	13
Clerk/typists	11	Salesmen	9
Maids	8	Truck Drivers	8
Bank Tellers	6	Cashiers	6
File Clerks	6	Stockroom Clerks	6
Painters	6	Bartenders	6
Bellhops	5	Desk Clerks	5
Motel Managers	4	Supervisors	4
Loan Officers	4	Auditors	4
Stock and Delivery Boys	4	Cooks	4
Processors	3	Carpenters	3
Office Machine Operators	3	News Men	3
Telephone Operators	3	Waitresses	3
Butchers	3	Housekeepers	2
L.P.N.'s	2	Welders	2
Registered Nurses	2	Engineers	1
Lift Operators	1	Crane Operators	1
Plumbers	1	Pilots	1
Seamstresses	1	Electricians	1
Advertising Salesmen	1	Television Camera Man	1
Security Guards	1	Receptionists	1
Beauticians	1	Heavy Equipment Operators	1
Telephone Installers	1	Surveyors	1
News Correspondents	1	Sign Painters	1

This list does not, of course, purport to include all of the different jobs in Monroe County. It merely represents the jobs being held by the employees of the various companies sampled.

Only six of the seventy-four companies sampled reported that they had no difficulty in hiring qualified people. Only eighteen reported no difficulty in retaining qualified employees. The major reason given for failing to retain employees was the transient nature of the population, particularly the dependents of military personnel.

Forty-one of the companies required a high school education for employment. Twenty-three said they would accept elementary level education. Three wanted at least some college education, and seven had no educational requirement.

Forty-four companies, more than half of those sampled, had plans for expansion in the near future. Sixty-seven of the respondents approved of an expansion of vocational-technical programs within the public school system and community college. Moreover, when asked whether the Monroe County Public Schools and the Florida Keys Community College were meeting the employment training needs of the area, only thirty-four employers answered yes. Sixty-one of the employers said they would encourage their employees to enroll in vocational-technical education if there were available programs relevant to their business needs. Twenty-nine companies would even provide time off with pay for any of their employees enrolled in such training.

(E.P.S. would like to re-assert at this point that these companies comprised a statistical random sample of the more than four hundred major employers of Monroe County. The findings from this sample are therefore generalizable to the larger population. It is also interesting to note that more than half of the employers involved were not native to Monroe County. Twenty-five of them had resided in Monroe County for no more than ten years.) Although a bit more vocal about the problems of Monroe County, the problems mentioned by the employers were not significantly different from those mentioned in the resident survey. The employers and the residents, in fact, seem to be in substantial agreement about County problems, except in one instance. Employers are concerned about the loss of military pay rolls. The typical employed or retired resident seems unaware that such a loss may have far reaching negative affects on the local economy. This is particularly true in the middle and upper Keys.

As an addition to the original survey instrument developed for major employers, E.P.S., in cooperation with the local Florida State Vocational Rehabilitation personnel and the public school system, included a five-question supplement to ascertain which specific companies would hire handicapped workers. Thirty-nine of these employers replied that they would. Of these thirty-nine, twenth-nine would hire the physically handicapped; eleven would hire the socially disabled (including the public offender); nine would hire the alcoholic; six would hire the drug addict. Only one would hire the mentally retarded, and none would hire the mentally ill.

Significant Findings of the Survey of Faculty and Administrators of the Monroe County Public Schools and the Florida Keys Community College

E.P.S. conducted a mailed survey of the total administrative and instructional personnel of both the County public school system and the community college. Out of more than seven hundred questionnaires sent, 331 were returned, some more complete than others. The majority of respondents answered the questions thoroughly, with complete candor, and obvious concern for the improvement and implementation of vocational-technical programs, as well as for the problems facing the Keys in general. A small minority of respondents either evinced a disinterested attitude or seemed more concerned with petty quarreling over the structure, logic, or connotation of certain questions.

Of the 331 returned survey forms, 280 were from teachers, 22 from administrators. Twenty-nine respondents did not identify their primary professional duty.

The great majority of respondents (285) were not, when asked, teaching any vocational-technical courses. Moreover, 260 had never taught such courses, and, indeed 194 said they would not like to teach them.

From the 140 who stated that vocationally oriented courses could be developed in their academic area, the following suggestions were compiled:

Home Economics for Boys
Cosmetology
Journalism
Basic Electronics
Vocational Math
Refrigeration
Carpentry
Math for Electricians
Laboratory Technician
Accounting
Use of Biological Instruments
Radio and T.V. Repair
Secretarial Skills
Welding
Data Processing
Business Law
Business Machine Repair
Waitress Training
Wood Shop
Cooking
Music
Plumbing
Nutrition
Motel Management
Speech
Service Station Work
Technical Manual Reading
Custodial Training
Teacher Aides
Sewing
Brick Masonry
Mechanical Drawing
Theatre Set Design
Recreational Sports
Advertising
Technical Writing
Underwater Photography
Electricity
Marine Science
Short Term Math
Chemistry for Nurses
Home Maintenance
Upholstery
First Aid for Emergency Crews
Job Awareness
L.P.N.
Interior Decorating
Consumer Economics

Three of the questions in the survey were designed to ascertain whether any negative feelings existed among school personnel for vocational-technical students. Indeed it does, at a very significant level. At least 100 of the respondents believe that vocationally oriented students are not as bright as the students involved primarily in academic courses. Forty-six of the respondents did not answer this question. When asked whether vocationally oriented education was best for students who could not seem to cope with normal college preparatory courses, 239 respondents answered yes. This figure represents more than seventy percent of the returned questionnaires. The question asking whether the intelligence level of the respondent's own child should be a factor in determining whether that child was primarily a vocational or a college preparatory student received a yes answer from 294 respondents, a figure representing nearly ninety percent of the returned questionnaires.

Until this widely held belief in the intellectual superiority of the college-bound student is proved to be groundless, vocational-technical programs will continue to be thought of as convenient dumping grounds for the "failures," the un-disciplined, the potential and actual "drop-outs." If school personnel do not actually believe that it takes superior intelligence to be more than a "good" mechanic why should students believe it? One further observation should be made here. It is interesting to note that in the survey of employers, the belief in the inferior intelligence of vocational students did not exist.

Of the four target populations surveyed, the public education personnel were more cognizant of community-wide problems and more suggestive of possible solutions to those problems. Following is a rank order, from most mentioned to least mentioned, of all the problems which were noted more than once:

Rank	
1	too many non-skilled workers
1	lack of job opportunities (contradicted by the employer survey)
1	lack of proper sewage treatment
2	lack of activities for youth
3	undereducation
4	community apathy
5	crime
5	lack of recreation centers
6	inadequate housing
6	few recreation areas
6	pollution
6	poor roads
6	economic depression
6	few cultural activities
7	lack of community interest in education
7	too much spare time
8	job shortages
8	not enough custodial help in the schools
8	lack of communication between college and merchants
8	low income
8	lack of industry

9	uninformed citizenry
9	lack of respect for older people and property
9	not enough builders and roofers
9	widespread personal health problems
10	environmental destruction
10	too rapid growth
10	poor attitude of businessmen
10	drop-out rate in schools
10	not enough training for high school students
10	corrupt politics
10	not enough good auto mechanics

In order to solve these problems, many suggestions were made by the respondents. Following is a rank order, from most mentioned to least mentioned, of all suggestions which were noted more than once:

Rank	
1	create industry to create more jobs
2	develop community awareness of the existing problems
2	offer vocational training at an earlier age
2	offer more vocational training
3	place more emphasis on vocational training so that people with academic deficiencies are not lost
4	provide more drug education
5	improve the entire educational system
5	train teachers specifically for vocational training
6	build more schools; provide more instructional materials, and reduce class loads
6	create more economic development
7	upgrade reading skills in elementary schools
7	build a vocational school
8	provide pay for on-the-job training
8	improve communication between the races
8	improve transportation facilities to attract industry
8	provide more guidance counseling
8	offer a wider range of vocational courses for girls
8	provide pay for trainees in vocational programs

When asked what specifically the local school system or the community college could do in solving some of these problems, 110 of the respondents had no answer, but of those who did answer, the great bulk of suggestions repeated those previously mentioned, except that more emphasis was placed on the need for an expanded vocational-technical program at all levels of education.

Findings of Student Survey

In an effort to determine how previous students of vocational-technical programs felt about their experience, and whether such training had been worthwhile to them, E.P.S. mailed 300 questionnaires to a sample of those students. Only fifty of those questionnaires were actually completed. Most of the questionnaires were returned to E.P.S. for lack of a forwarding address. As a result there is no statistical reason to think an analysis of the survey instrument will be of any significance.

With this caveat the following generalizations are presented:

1. Most respondents believed that their vocational training was a good experience and helpful in gaining them employment.
2. Most respondents, however, believe they need more training.
3. The respondents made the following suggestions for vocational-technical training:
    1. More courses in auto mechanics
    2. More cosmetology courses
    3. More boat maintenance courses
    4. Courses in conservation-oriented vocations
    5. Courses in the training of laboratory technicians

The problems that the students mentioned as serious community concerns were not different from those mentioned in the other county-wide surveys. It should be stated, though, that this group also voiced the need for a vocational-technical school.

Analysis of Present Monroe County Vocational-Technical Program

From discussion with Mr. Vince Brassi, Director of Vocational-Technical Education for the Monroe County Public Schools, and Mr. Howard Fowler, Chairman of the Division of Vocational-Technical Education at Florida Keys Community College, as well as from an analysis of the vocational-technical programs offered by both the public schools and the community college, E.P.S. presents the following observations, description, and recommendations.

First let it be said that both gentlemen, Mr. Brassi and Mr. Fowler, are capable and sincerely concerned about the vocational-technical programs of Monroe County, not only with regard to the extent and breadth of these programs, but also with the quality and relevancy of each individual offering.

In the current catalog of Florida Keys Community College there are 281 separate courses listed, of which 129 are vocationally or technically oriented. Besides the Associate of Arts degree which can be earned in the usual academic areas, the college awards the Associate of Science Degree in:

Commercial Art
Electronics Data Processing
Electronics Technology
Environmental Marine Science
General Business
Teacher Aide
Mid-Management Marketing
Police Administration
Secretarial Science
Marine Propulsion Technology
Nursing Technology

Certificates are awarded in:

Business Data Processing	Marketing
Gasoline Engine Technology	Real Estate
Marine Diesel Technology	

Though the college has an extensive listing of vocational-technical courses, its actual vocational-technical program is limited in scope. Of the programs in operation, Marine Propulsion Technology is by far the most vigorous and well attended. However, according to the Residential Survey data and the Employer Survey data, few people are aware of the college offerings, or even realize that it is a place where more than university transfer courses are taught. This is especially true outside the immediate Key West area.

Lack of awareness of vocational-technical offerings, though, is not an exclusive problem of the community college. The public school offerings, admittedly wider spread, more extensive, and attended by hundreds of more people, are also not a part of general public knowledge. Though the overwhelming majority of Monroe County residents believe that vocational-technical training should be part of the responsibility of the public school system, they are, for the most part, unaware that such programs already exist. Residents tend to verbalize strong, supportive feelings for the schools and their traditional curricula, but are unable to make any judgments about either the quantity or the quality of the vocational-technical program.

Vocational-technical training opportunities from the junior high school through the community college are, therefore, an unknown quantity, as far as the average resident and employer are concerned. Further proof of this can be found by noting what courses the residents and employers would like to see offered. All of the courses presently offered in the county were repeatedly requested and thought of as those which should be developed and offered. Although the offerings are not as diverse and inclusive as many would like, it is certain that the college and public schools are providing most of the courses that are deemed important by the general citizenry. This fact, however, is not a matter of wide-spread public knowledge.

The following compilation of the public school vocational-technical programs offered county-wide provide additional evidence to support the preceding conclusions:

Upper Keys

Course	Approximate Number of enrollees	School
Bookkeeping	17	Coral Shores H.S.
Gasoline Engine Mechanics	39	" " "

Home Economics	97	Coral Shores H.S.
Vocational Office Education	24	" " "
Work Experience	27	" " "
DCT	22	" " "
Auto Mechanics	26	" " "

Middle Keys

Course	Approximate number of enrollees	School
Electronics	125	Marathon H.S.
Clerical Office Practice	48	" "
DCT and OJT	73	" "
Work Experience	26	" "
Home Economics	83	" "
Auto Mechanics	32	" "
Industrial Arts	25	" "
Outboard Engine Repair*	10	" "
Gasoline Engine Mechanics	37	" "

Lower Keys

Course	Approximate number of enrollees	School
Bookkeeping	17	Key West H.S.
Shorthand	17	" " "
DCT and OJT	115	" " "
Home Economics and Child Care	558	" " "
Vocational Office Education	35	" " "
Electronics	31	" " "
Welding	32	" " "
Air Conditioning	13	" " "
Auto Mechanics and Body and Fender Repair	47	" " "
Exploratory Welding	42	" " "
Gasoline Engine Mechanics	35	" " "
Outboard Engines*	30	" " "
Typing*	20	" " "
Clothing Construction*	39	" " "
TV Repair	12	" " "
Welding *	48	" " "
Office Machines	34	" " "

*Refers to evening classes

Course	Approximate number of enrollees	School
World of Construction	38	Glynn Archer Jr. High
Work Experience	15	" " " "
Vocational Office Education	17	" " " "
Home Economics	99	" " " "
Shop	89	" " " "
Home Economics	21	Horace Bryant Jr. High
Child Care	15	" " " "
Custodial Service	6	May Sands
American Industry	31	" "

CAREER EDUCATION - - AN APPROACH

Increasingly the concept of career education, an integrated K – 16 approach to the development of students with salable skills, is becoming the central focus of attention by educators nation wide. Entire school programs are being restructured around the theme of career development. Many theories about how to accomplish such a restructuring have been propounded. Hoyt, in discussing the components of career education stated that:

1. Classroom teachers at all levels must stress work values, habits, and explore career implications.
2. Vocational skill training (recognizing and acting to expand all of vocational education training) must be built on the current base. Any class can be vocational- - depending upon the motives of the member of that class. Education for preparation for work must become the goal of all teachers.
3. The business community must provide educational on site opportunities for both teachers and students. Job development and job placement become more and more important.
4. Career Development Programs must be devoted to helping students to make reasoned decisions concerning employment.(1)

We recommend a multi-phased program, moving sequentially from the elementary grades, to the junior high, to the secondary school, and into the college or university. In elementary school, students learn of the many jobs available, as well as the various roles and requirements involved. In junior high, students explore clusters of occupations, and, in many cases, are given hands-on experience. In secondary school, students pursue the exploration of specific occupational areas. At this time they also exercise one of several options, such as the following:

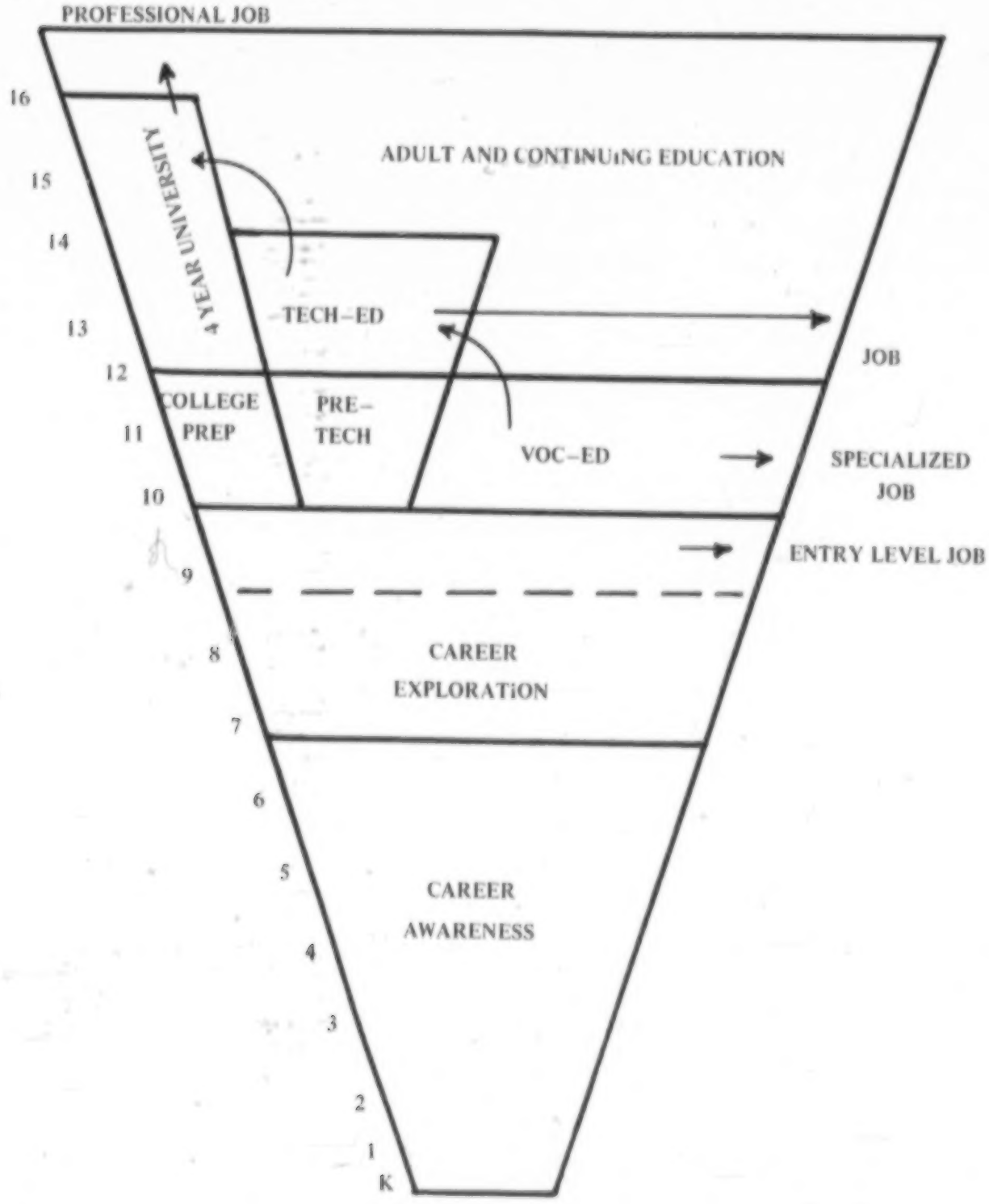
1. Preparation for post-secondary specialized training.
2. Preparation for a major field in a college or university, or
3. Preparation for immediate employment after high school.

Students following such a sequential, occupationally oriented curriculum usually find themselves unable to ask the often-heard question, "why are we learning this?" Their courses are relevant, meaningful, and purposeful, and all are directed toward providing them with actually salable skills.

CAREER EDUCATION SUGGESTED MODELS

Following are two models which may prove useful in the development of Career Education in Monroe County:

(1)Hoyt, Kenneth B., Speech: "Career Education–Its Nature and Need," National Topical Conference on Career Education for Exceptional Children and Youth, February 12, 1973, Jung Hotel, New Orleans, Louisiana.


PROFESSIONAL JOB
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
K
4 YEAR UNIVERSITY
ADULT AND CONTINUING EDUCATION
TECH-ED
JOB
COLLEGE PREP
PRE-TECH
VOC-ED
SPECIALIZED JOB
ENTRY LEVEL JOB
CAREER EXPLORATION
CAREER AWARENESS
CAREER EDUCATION

CAREER EDUCATION EXPERIENCES BY GRADE LEVEL

GRADES 1–6	GRADES 7–8	GRADES 9–10	GRADES 11–12		
STUDENT DEVELOPS SELF–AWARENESS AND UNDERSTANDING OF HIS INTERESTS AND ABILITIES					
STUDENT DEVELOPS POSITIVE ATTITUDES ABOUT THE PERSONAL AND SOCIAL SIGNIFICANCE OF WORK					
OCCUPATIONAL AWARENESS Student is informed about occupations through a series of clusters representing the entire world of work.	OCCUPATIONAL ORIENTATION AND EXPLORATION Student explores several clusters of his choice	OCCUPATIONAL EXPLORATION IN DEPTH, BEGINNING OF SPECIALIZATION Student selects one cluster to explore in greater depth. Develops entry-level skills. May change cluster if desired.	SPECIALIZATION Student specializes in one cluster. Takes prerequisites for further education and/or intensive skill training for job entry.	100% PLACEMENT (VERY IMPORTANT)	SPECIFIC JOB NON-BACCALAUREATE PROGRAMS, A.A. DEGREES, ETC. BACCALAUREATE PROGRAMS

In projecting the need for the expansion of vocational-technical training opportunities in Monroe County, E.P.S. notes the following estimated target groups:

Traditional Target Group	Approximate number of individuals
Undereducated, unskilled minorities	5,000
Former employees of the military, including some veterans	2,000
Underemployed and unemployed, including migrant groups	5,000
School dropouts per year	500

Clearly traditional approaches need to be examined and all students from K – 12 must be exposed to career education opportunities – not simply minority group members, veterans, etc.

Suggested Vocational-Technical Programs

Before actually listing programs which survey data reveal to have high public interest and a high potential for meeting some of the critical heretofore unmet County needs, E.P.S. makes the following observations:

1. The current on-going programs offered by both the public schools and the community college are necessary and should not be curtailed. As mentioned earlier, however, the accent is overly focused on the youth population whose primary occupation is that of earning an education rather than earning a living. Admittedly it is much more difficult to staff programs at other than normal hours, but it must be done if the needs of the general population are to be adequately met.

2. In line with the above comment, however, it is also true that such expanded training programs, which should be offered on a twelve to sixteen hours per day basis, cannot be developed within the existing physical facilities, a fact pointing once again to the need for a vocational-technical training center.

3. A coalition of public school, community college, and business leaders should be formed, not only for the obvious public relations reasons, but for the not so obvious need to suggest and develop vocational-technical training opportunities within a broadly representative community group.

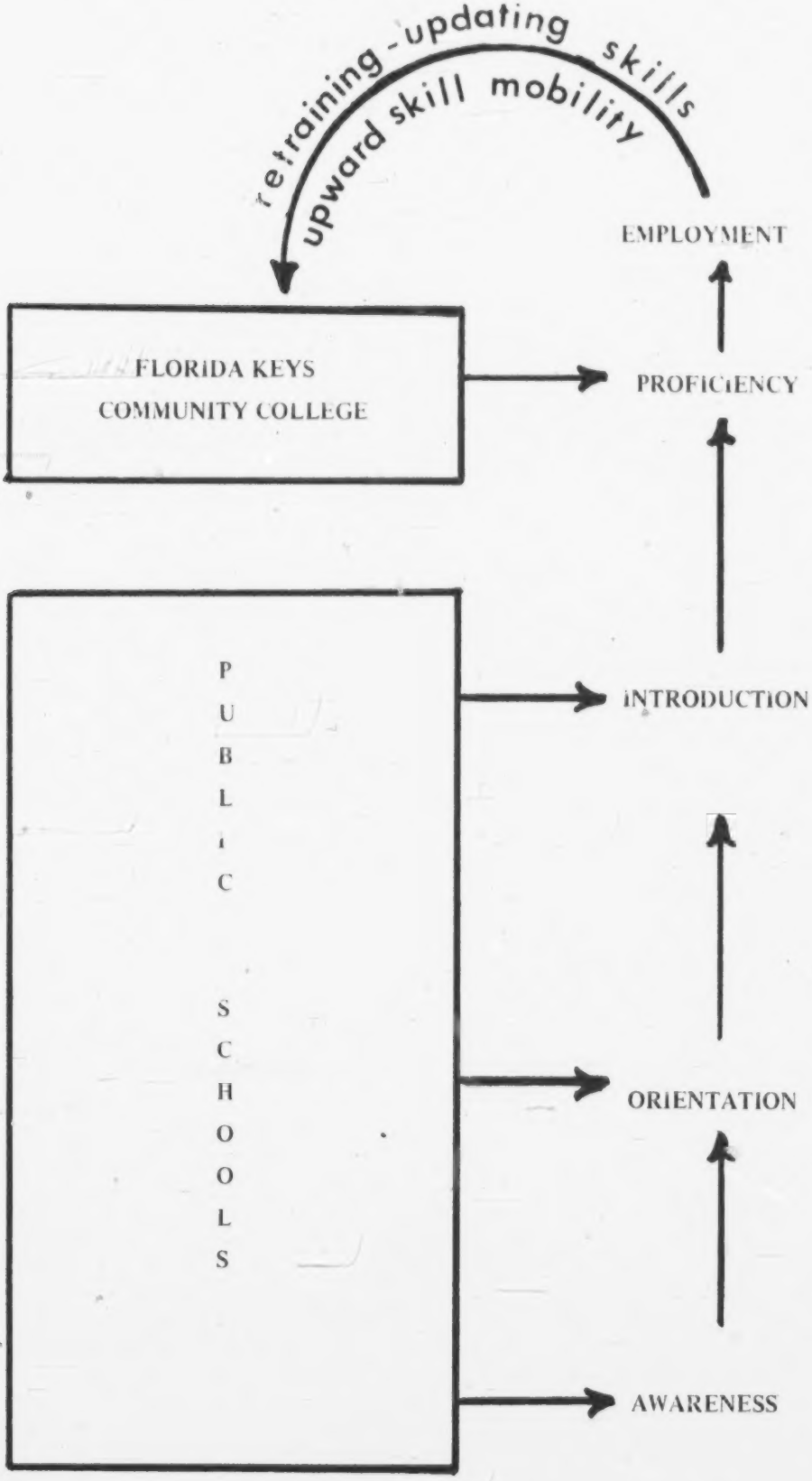
4. While adequate academic programs in the area of home economics and business education exist in the public schools, the E.P.S. surveys revealed that many respondents thought that more alternatives should be available to female students.

It is recognized that diligent efforts have been made by Monroe County educational officials to provide a wide range of vocational-technical courses. The previously listed programs currently offered are, for the most part, practical and effective. We have recommended that these courses

be retained. In order, however, to implement the principle of coordinated career development throughout the county, we are listing on the following pages recommendations for a program of studies which is designed to correlate the broad aims of an overall K—14 career development plan.

The junior and senior high career development course offerings are designed to supplement and extend the current program regardless of whether affirmative action is taken with regard to the initiation of a county vocational-technical education center.

With this note of amplification, E.P.S. makes the following recommendations:



CAREER DEVELOPMENT CYCLE

MONROE COUNTY EDUCATIONAL INSTITUTIONS

CAREER EDUCATION IN THE ELEMENTARY SCHOOLS

Leading educational planners have advocated that our nation's students need to be guided more successfully toward personal fulfillment through relevant and effective career education programs. The U.S. Office of Education has suggested that career education is a systematic way to acquaint students with the world of work during their elementary and junior high years, and to prepare them during their secondary school and college years to enter and progress in a career field which they may select in a logical and informed manner.

Monroe County Schools should give strong consideration to the planning and implementation of career education programs on both the elementary and high school levels. In actual practice the elementary students can study concepts in the academic area of math, science, English and social sciences by relating the subject matter to the production of various projects. In one school, for example, a group of fourth-graders actually built a log cabin in their classroom while studying colonial American history. Endless possibilities exist for the designing of innovative units of study, the procurement of necessary materials and resource personnel that will compliment the general education offerings.

Any career development should have definite objectives. These might include: (1) the student's evaluation of self characteristics, (2) exploration of various occupational areas, (3) introduction to economic education, (4) introduction to the sociological and psychological implications of work, (5) orientation regarding the social value of work, (6) exploration of numerous avenues of educational attainment, and (7) refinement of the student's ability to make an occupational decision.

A life-centered, activity-unit career education program such as the one recently initiated by the Cobb County, Georgia Public Schools can be developed. A most effective organizational pattern includes six elements or components that should be incorporated into all units. They are (1) hands-on activities, (2) role playing, (3) community field trips, (4) bring resource people into the classroom, (5) strategic subject matter tie-ins, and (6) introduction to relevant occupations.

In addition to the unit-center approach it is possible to create activity centers that relate to different occupations that are a part of the individual classrooms.

Multimedia occupational packages have been developed and tested by Eastern Illinois University. These packages provide a broad range of audio visual experiences and are relatively inexpensive.

Another effective approach is a community oriented exploratory program wherein local businesses and services join with the schools to provide opportunities for students to explore the world of work. Local financial institutions can do much to contribute to career education in the elementary

grades by offering their resources to counsel with students in the area of economic education. Make-believe banks can be established in each classroom and actual financial transactions can be made by students that cover most of the normal activities of banks, saving and loans, and related institutions.

Career education is only a segment of the total educational process and most occupational experience-oriented activities can and should be integrated into the schools normal academic structure. A major contribution of career education should be the strengthening of the total educational process rather than overemphasis of one phase.

By beginning career education in elementary school the child's self concept is enhanced and the groundwork is laid for rational identification with occupations at a later time. An essential objective of elementary education in such a program is to discover if possible the talents and interests of each student and to demonstrate their relationship to the world of work.

It is entirely possible that an excellent elementary school career education program can be developed and implemented without the addition of extra staff. Guidance counselors and committees of teachers, administrators, parents, and community leaders should be brought together for frank discussions and recommendations.

POSSIBLE CLUSTER–UNITS FOR ELEMENTARY SCHOOL CAREER EDUCATION:

I–COMMUNITY INDUSTRIES
- A. Making a Field Trip
- B. A Trip to a Pet Shop
- C. A Trip to the Fire Station
- D. Community Industries
- E. The Home
- F. Worker's Attitude
- G. Foundations for Occupational Planning

II–AGRICULTURAL OCCUPATIONS
- A. Dairy farmer
- B. Orchard Manager
- C. Forester
- D. Wheat Farmer
- E. Broiler Grower
- F. Commercial Fisherman

III–DISTRIBUTIVE EDUCATION
- A. Waiters and Waitresses
- B. Real Estate Agent
- C. Drugstore Salesclerk
- D. Truck Driver
- E. Groceryman
- F. Gasoline Service Station Attendant
- G. Bank Teller

IV–HEALTH OCCUPATIONS
- A. Doctor
- B. Pharmacist
- C. Registered Nurse
- D. Nurse's Aide
- E. Dietician

V–BUSINESS AND OFFICE OCCUPATIONS
- A. Secretary and/or Stenographer
- B. Receptionist
- C. Cashier
- D. Telephone Operator
- E. Postman
- F. Postmaster

VI–TECHNICAL AND TRADE AND INDUSTRIAL EDUCATION
- A. Baker
- B. Fireman
- C. Electrician–Construction and Maintenance
- D. Bricklayer
- E. Carpenter
- F. Cosmetologist
- G. Policeman
- H. Automobile Mechanic
- I. Shipbuilder
- J. Marine Biologist

SPECIAL RESOURCE MATERIALS

"Developing Initiative Through a Unit on Cotton," INSTRUCTOR, 51:19

"Occupational Concerns of Sixth Grade Children," VOCATIONAL GUIDANCE QUARTERLY, 18:219–244 (March, 1970)

"Vocational Preparation at the Elementary Level," TEACHING EXCEPTIONAL CHILDREN, 2:63–66 (Winter, 1970)

"Career Experiences Appropriate to Elementary School Grades," SCHOOL COUNSELOR, 17: 262–264 (March, 1970)

"Children Explore Careerland Through Vocational Role Models," VOCATIONAL GUIDANCE QUARTERLY, 17:284–289 (June, 1969)

"Occupational Group Conferences in Grade Two," ELEMENTARY SCHOOL GUIDANCE AND COUNSELING, 4:150–151 (December, 1969)

"Developing Resource Units," SCHOOL AND COMMUNITY, 56:23 (November, 1969)

"Occupational Orientation Means Work for You," GRADE TEACHER (April, 1971)

"Workers in the Community," INSTRUCTOR, 76:28–29 (January, 1967)

"On-the-Job Training for Over-age Elementary School Students," SCHOOL SHOP, 25: 73–75 (April, 1966)

"Career Development K through 14," AMERICAN VOCATIONAL JOURNAL (December 1969)

"Fifth Graders View the Work World Scene," ELEMENTARY SCHOOL GUIDANCE AND COUNSELING (May, 1971)

"Implementation of the Technology for Children Project," American Vocational Association Presentation

"Synopsis Cobb County Occupational and Career Development Program," 1970 Joel Smith, Project Director

"Seattle's Concentration on Careers," AMERICAN EDUCATION (July 1971)

"You and Work–An Instructional System for Children in Elementary School," AMERICAN VOCATIONAL JOURNAL (November, 1969)

"Occupations for Hands-on Learning," AMERICAN VOCATIONAL JOURNAL (January, 1972)

"Quantum Leap or More Foreplay for the Human Services," SOCIAL POLICY (January/ February, 1972)

"Career Education Concept Filters Down," AMERICAN VOCATIONAL JOURNAL, (September, 1972)

THE ACHIEVING SOCIETY, David McClelland

"Workers Increasingly Rebel Against Boredom on Assembly Line," SUNDAY NEW YORK TIMES (April 2, 1972)

THE CHANGING VALUES ON CAMPUS, Daniel Yankelovich

"Careers and the Future," CHANGE (Summer, 1972)

"The Endless Renaissance," AMERICAN EDUCATION (April, 1972)

"Marland on Career Education," AMERICAN EDUCATION (November, 1971)

"Occupacs: Simulated Career Development Experiences for Elementary School Children," BUSINESS EDUCATION FORUM (February, 1972)

"Career Guidance in the Elementary School," ELEMENTARY SCHOOL GUIDANCE AND COUNSELING (December, 1971)

"Occupational Education in the Curriculum," EDUCATIONAL LEADERSHIP (November 1971)

"Tooling Up the System from Kindergarten Through Community College," AMERICAN EDUCATION (November, 1971)

CAREER GUIDANCE, WHO NEEDS IT, WHO CAN PROVIDE IT, WHO CAN IMPROVE IT, Eli Ginzberg, et. al.

"Researchers Discuss Career Education, Performance Goals," AMERICAN VOCATIONAL JOURNAL (January, 1972)

"Education for More Than One Career," WORLD (June 7, 1972)

"Where Job Training Starts in Kindergarten," PARADE (April 9, 1972)

"Nixon Sees U.S. Work Ethic Reaffirmed," THE BOSTON GLOBE (September 7, 1971)

"Career Education 300 Days Later," AMERICAN VOCATIONAL JOURNAL (February 1972)

"OE on Career Education," CHANGE (June 1972)

"Toward a Theory of Occupational Choice," PERSONNEL AND GUIDANCE JOURNAL (April, 1952)

OCCUPATIONAL CHOICE: AN APPROACH TO A GENERAL THEORY, Eli Ginzberg, et. al.

"Research in Vocational Development: Implications for the Vocational Aspects of Counselor Education," VOCATIONAL ASPECTS OF COUNSELOR EDUCATION

"Knowledge and Interests Concerning Sixteen Occupations Among Elementary and Secondary School Students," EDUCATIONAL AND PSYCHOLOGICAL MEASUREMENT, Vol. 23

"Children's Conceptions of Occupational Prestige," PERSONNEL AND GUIDANCE JOURNAL, Vol. 42

"The Elementary School's Responsibility for Today's Vocational Misfits," Science Research Associates Newsletter, 1960

"Counseling in the Elementary School," 1968

"The School Psychologist and the Mental Health Needs of Children," SCHOOL PSYCHOLOGICAL SERVICES (1967)

A PLAN FOR JUNIOR HIGH SCHOOLS

In today's changing and complex society, education for students must be more relevant to careers. The educational system should take steps to provide a process of education which will allow the student an opportunity to participate in exploratory work experiences.

A comprehensive plan for career program development in the junior high schools of Monroe County will involve:

1. The expansion of the number of courses currently offered;
2. Extensive alterations of content included in current courses;
3. Providing numerous opportunities for student exploration of several occupational clusters.

The Career Development Program is designed to offer junior high school students opportunities to investigate career possibilities. The students are not expected to make a definite career decision; however, it is anticipated that experiences gained in the program will help them to determine some of their likes, dislikes, strengths, and weaknesses relative to various occupations. After completing this orientation, we feel that the boys and girls of Monroe County will be better prepared to select a course of study in high school which will lead to their occupational goal.

"The Career Development Program" has been divided into three established instructional areas--Business Education, Home Economics, and Industrial Education--for the purpose of grouping related occupations into clusters. Teachers should involve students in planning and activities which are realistic to them.

FOLLOWING ARE RECOMMENDED AREAS OF CONCENTRATION FOR THE IMPLEMENTATION OF CAREER EXPLORATORY EDUCATION IN MONROE COUNTY JUNIOR HIGH SCHOOLS

BUSINESS EDUCATION

Orientation to Business Education
Exploring Selected Occupations within a Cluster
Employer-Employee Relationships
Clerical Careers
Marketing and Distribution Careers
Careers Related to Tourism
Secretarial Careers
Bookkeeping-Accounting Careers
Data Processing Careers
Administrative and Managerial Occupations
Professional and Technical Careers
The Relationship of Our Economic System to Occupations and the Consumer

HOME ECONOMICS

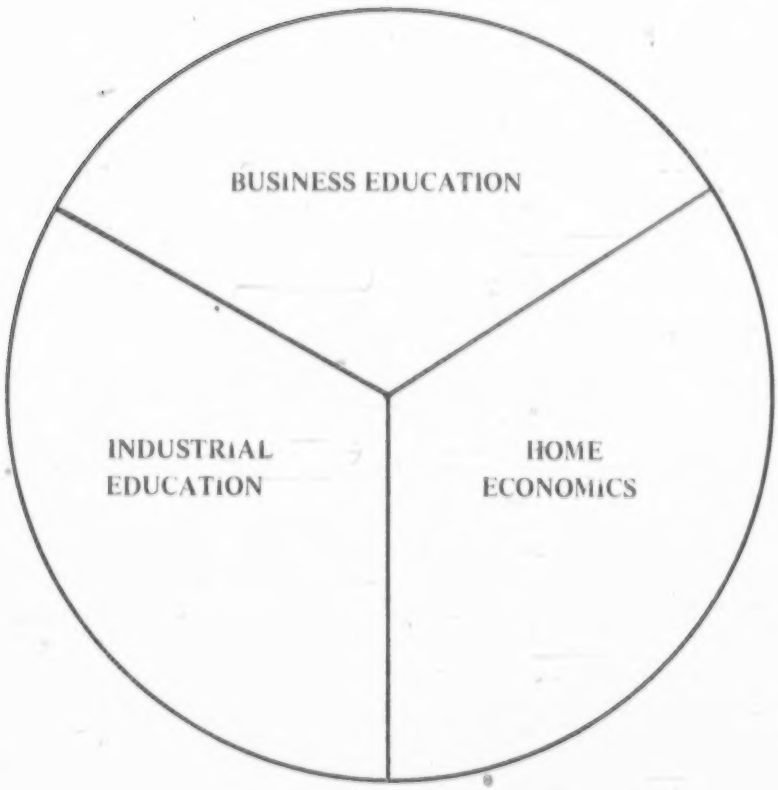
Orientation to Home Economics
Careers in the Food Service Industry
Consumer and Homemaking Occupations
Textile and Clothing Careers
Health Service Careers
Exploring Public Service Careers
Social and Protective Service Careers
Exploring Personal Service Careers
Fine Arts and Jumanities
Management of Money, Time, Credit, and Business Records
Understanding Civic Responsibilities
Evaluating the Careers that have been Explored

INDUSTRIAL EDUCATION

Introduction to Industrial Education
Labor Unions and Related Organizations
Legal Requirements of Working
Drafting Careers
Building Trades
Forest Industry Careers
Career Opportunities in the Metal Industries
Electrical and Electronic Careers
Graphic Arts
Exploring Agricultural Careers
Maintenance and Repair Careers
Transportation Careers
Planning the High School Program

*It should be noted that Monroe County Schools are organized as K–5, 6–8, and 9–12. References to "Junior High School" apply to grades 6–8 or Middle School.

PROPOSED PLAN FOR CAREER EXPLORATORY EDUCATION
MONROE COUNTY JUNIOR HIGH SCHOOLS



JUNIOR HIGH CAREER DEVELOPMENT COURSE OFFERINGS

INVESTIGATING CAREER OPPORTUNITIES

COURSE DESCRIPTION: The course is designed to offer the student opportunities to investigate career development possibilities. The student will have an opportunity to explore many occupational families (or clusters) by his involvement in actual and simulated work-role experiences. The curriculum is built around behavioral objectives that will challenge all students and at the same time allow for individual differences. Along with investigating career opportunities, the student will be able to investigate his personal values, abilities, and personal traits. Utilization of community resource such as speakers from industry, model job interviews, field trips, etc., makes for a live and realistic curriculum presentation.

Junior high students need to start making a tentative selection of an appropriate high school curriculum. The primary objective of this course is to allow the student to investigate himself in terms of his interests and abilities for the purpose of planning a course of study suited to him.

Thus, all students will profit by taking this course in that they will become aware of the importance of making good grades in their basic subjects in order to prepare themselves for the vocational area they have selected. For example, a student interested in investigating career opportunities in the engineering fields will find that he needs to make better than average grades in mathematics, or he will become aware that without a good mathematical aptitude it will be to his benefit to select another occupation for investigation.

ORIENTATION TO CONSTRUCTION CAREERS

COURSE DESCRIPTION: This course is designed to orient students to careers in the construction occupations. Students will be involved in the construction of laboratory projects in the following four occupational areas: drafting, wood fabrication, metal fabrication, and electricity. The correct use and care of basic tools used in these occupations will be introduced to the students. Related classroom instruction includes the study of woods, metals, electricity, and drawings. Approximately nine weeks will be spent on each of the four areas and two periods each week will be spent on classroom instruction.

BUSINESS EXPLORATORY

COURSE DESCRIPTION: Business Exploratory is an introductory course in Business Education with emphasis on typewriting. As soon as a basic skill in typewriting is acquired, the following exploratory units are presented: shorthand, record keeping, filing, office machines, marketing and distribution, telephone techniques, receptioning, handling the mail, office supplies, job application and interview, personal and human relations, and data processing. All of the units have been designed to integrate and develop the basic skill of typewriting. In addition to the exploratory units, information will be provided about occupations which will give the students an opportunity to evaluate their attitudes, abilities, and interests.

This course is not intended to prepare a student for a specific job. It is an exploratory course designed to help the student gain an understanding of the business world and of the wide range of career opportunities in business while learning the fundamentals of typewriting.

CAREER EXPLORATION

COURSE DESCRIPTION: Many students by the time they are in the eighth grade have reached a point in their educational development and their personal maturity where it would be to their advantage to start exploring occupational areas of interest. To be admitted to the career exploration program, the student should have the recommendation of his junior high principal and counselor.

* One additional staff member in each junior high school should be sufficient to carry out the intent of this program.

** E.P.S. will furnish a post-publication supplementary statement following a review of the Florida State plan for Vocational Education. This supplement shall become a part of this report.

SENIOR HIGH SCHOOL CAREER DEVELOPMENT
RECOMMENDED COURSE OFFERINGS

BUSINESS EDUCATION COURSES

ACCOUNTING I

COURSE DESCRIPTION. Instructional emphasis is placed on developing an understanding of fundamental accounting principles involved with the use of simple books of original entry and making workable operating financial reports. The following is a list of objectives: (1) develop an understanding of basic double-entry accounting, related clerical activities, and elementary business statements; (2) stress analysis of accounting transactions and interpretation of business situations; (3) impart an understanding of accounting concepts and business terminology; (4) instill proper work habits and attitudes such as the ability to follow instructions, legible handwriting, accuracy, and pride in accomplishment; (5) recognize the relationship of accounting to modern data processing techniques; (6) appreciate the impact of automation in our social and economic environments; (7) relate basic principles of accounting to varying management functions; (8) encourage students to explore their interest in and aptitude for the fields of accounting or data processing; (9) develop skills and concepts which will be useful to the student, regardless of specific job requirements; (10) inculcate qualities of honesty, responsibility, and cooperation toward both employer and co-worker; and (11) enable the student to manage wisely his own personal business affairs with particular emphasis on the wise planning of income and expenditures.

When a student has gained understanding of the relationship between systematic, logical recordkeeping and management decision-making, he has truly learned the purpose of accounting. This understanding is accounting's new and important function. Should be available to students in the eleventh or twelfth grades.

Initial employment opportunities are available in accounting departments of large business firms, in recordkeeping jobs for small businesses and for professional offices. Secretarial and stenographic occupations, computer operators and data processing people, sales people, and record management clerks are related occupations for which a knowledge of accounting is not only desirable but necessary. A basic understanding of accounting is becoming imperative for beginning office workers as mobility from firm to firm and within a firm is becoming more prevalent every day.

ACCOUNTING II

COURSE DESCRIPTION: Accounting II develops the principles learned in Accounting I to a nigher degree and takes up some of the following new principles:

Partnership accounting	Manufacturing and cost accounting
Departmental revenue accounts	C.O.D. records
Analysis of financial statements in detail	Corporation accounting
Installment records	Theory of data processing
Consignment records	

In addition, it points out the importance for unequivocal accuracy. It requires the meticulous following of directions. It lends itself to the concept of work flow and flow charting. It is designed to increase the competency of those who wish to enter into accounting as a career upon graduation from high school, and it can give a greater understanding of financial operations of a business to those who will enter business in non-accounting jobs. Only those students who show an aptitude for and an interest in Accounting I should be allowed to enroll in Accounting II.

Initial employment opportunities are available in accounting departments of business firms, in recordkeeping jobs for small businesses and for professional offices. A basic understanding of accounting is becoming imperative for beginning office workers who are general clerical workers or are in some phase of data processing.

BUSINESS MATH

COURSE DESCRIPTION: This course is designed to give competency in the fundamentals of mathematics. Arithmetical principles are applied to the understanding and use of consumer credit, income, expenses, and underlying economic principles relating to these units. Business Math gives business students a background for Accounting I, Office Machines Practice, Simulated Office Practice, and the COE Program. Any student enrolled in the 10th grade of average or above ability in math should be considered for this course.

This course is not intended to prepare students for any one specific job. It is intended as a background course for students who are planning to enter the stenographic or secretarial, accounting, data processing, or general clerical fields. If these students possess a sound knowledge of basic business math, their chances of promotion on the job will be greatly enhanced.

SHORTHAND I

COURSE DESCRIPTION: Instruction is given in the basic fundamentals of the shorthand alphabet and in their applications to the reading and writing of graded material on which transcription skills can be built. Punctuation and spelling are stressed because of their importance in transcribing shorthand notes into mailable copy. The major objective is to develop a minimum shorthand writing skill of at least 60 words per minute for 5 minutes on relatively easy and controlled material and to transcribe this material into mailable copy. This course should be open to junior students who show an interest and an aptitude for clerical and secretarial work. In order to be accepted in the course the student should have maintained a "C" average or better in English and should have completed one year of typewriting or Business Exploratory and be able to type a minimum of 30 words per minute. With special permission, seniors may enroll in the course but should be discouraged from doing so because one year of shorthand is inadequate to develop vocational competency.

There is a critical demand for employees who are trained in this area. Many businesses will not employ a beginning worker unless he or she has had shorthand. The possibilities for employment for young men who can write shorthand are unlimited. Students who have this skill have opportunities for rapid promotion and can use these beginning jobs as steppingstones to higher level positions.

DICTATION–TRANSCRIPTION

(Shorthand II)

COURSE DESCRIPTION: The objective of this course is that the student will be able to take dictation at a rate of at least 80 words per minute and transcribe the copy into mailable form in a minimum of time. The course combines the skills developed in shorthand with the skills of typewriting, related business English, spelling, and office procedures. The student should have completed a year of shorthand with a "C" average or higher. The student should be able to type at least 40 words per minute and should have maintained a "C" average or better in English.

GENERAL BUSINESS

COURSE DESCRIPTION: General business is an exploratory course in business and office occupations. The following are some of the major goals of the course: (1) to provide the student with background for study in more advanced courses in business; (2) to provide guidance for students who through this course decide whether or not business is the type of work they desire to enter; (3) to provide students with an understanding of business and economic terms; (4) to give students a foundation in the understanding of the American business-economic system; (5) to provide basic business education to those students who may drop out of school.

The following are some of the areas covered: (1) the nature of business and its importance in our personal, social, and national welfare; (2) the functions of money and the intelligent use of banks; (3) the services performed by business; (4) the use of credit and the function of credit in business; (5) insurance; (6) how transportation and shipping services contribute to our economic well-being; (7) how and why our economic system makes it possible for Americans to enjoy an unusually high standard of living; and (8) the present day need for well-trained workers and the necessity for making plans for a career in which each individual can make his greatest contribution to personal, civic, social, and economic well being. Any student enrolled in the tenth grade should be able to take General Business.

This is an exploratory course and is not designed to prepare the student for specific employment. It is designed to acquaint students with the business world in general and to allow them to explore career possibilities with the hope that they will be able to plan their high school careers more wisely.

MACHINE OFFICE PRACTICE

COURSE DESCRIPTION: Machine Office Practice gives the student training in mailing procedures, financial procedures, sales routines, purchasing and stock procedures, telephone techniques, filing, payroll procedures, letter writing and reports, business English, spelling, business math, data processing, copying and duplicating, and job application and interview. This course develops the student's ability to perform clerical duties at an employable level, develops personal qualities and attitudes needed for success in business, develops production typewriting as a basic tool, introduces modern office machines for mastery by the student, and develops the ability to take job-

entrance clerical tests. Any student in the eleventh grade who has had one year of typewriting should be considered for enrollment in the Machine Office Practice Course.

Nearly every business firm in the Key West area employs at least one general clerical worker. Machine Office Practice trains the student to fulfill the general clerical role and to fit into any general situation. In addition, many jobs are available for people trained in the use of office machines. Small businesses use people trained to operate machines as bookkeepers and record-keepers, invoice and pricing clerks, and general clerical employees. People entering the secretarial, accounting, data processing, and selling fields should have a general basic knowledge of modern office machines and procedures. The more skills in related areas obtained, the greater the student's chances for advancement.

OFFICE EDUCATION (COOPERATIVE)

COURSE DESCRIPTION: The Cooperative Office Education Program consists of classroom instruction and on-the-job work experience. The primary objective is to bring together the knowledge, skills, and techniques learned separately and apply them to an actual office situation. Seniors attend their regular classes in the morning, including one related instruction period of office education. They are placed in selected offices for on-the-job training in the afternoon. The teacher-coordinator correlates classroom instruction with on-the-job training by visiting students and planning work experiences cooperatively with the student's supervisor or employer. Students receive three units of credit--one for the Cooperative Related Class and two for their job training--and are paid an hourly wage commensurate with other employees of similar experience and training. Classroom instruction provides the following opportunities: (1) to develop desirable personal qualities, traits, and attitudes; (2) to develop further skills and acquire a workable acquaintanceship with office machines; (3) to develop skill and experience in performing a variety of office duties and procedures; and (4) to contribute to the development of the student's ability to think on the job. The student is aided through guidance toward a better vocational choice and is able to put his skills to work on the job now. He must also learn to work and get along with others. This course should be available to seniors who are preparing for full-time employment in an office occupation. To be accepted for the program, the student should have completed successfully Typewriting I and at least one and preferable more of the following: Shorthand I, Accounting I, Machine Office Practice.

The COE Program has built-in job opportunities as all students who participate must have a job in order to be on the program. From past experience, those students who perform satisfactorily at their COE stations have been retained as permanent employees and promoted accordingly. If they have not been retained, they have had no difficulty securing another job because of their year's work experience and the recommendations of their COE job supervisor. The business world always has a place for a mature, trained, young clerical employee.

SIMULATED OFFICE PRACTICE

COURSE DESCRIPTION: This is a finishing course in which previously learned skills and knowledges are integrated into real situations. The students are given the opportunity to develop the ability to perform typical office tasks efficiently and productively and to develop self-confidence by working cooperatively with others while accomplishing these tasks.

The first semester of the course is spent in reinforcing, integrating, and refining office skills and procedures previously studied as separate units in typewriting, shorthand, accounting, machine office practice, business math, English, and general business. Some new skills and office procedures are also studied. Some of these are: key punch training, the use of the proportional-spacing typewriter, machine transcription, and legal and medical trancription.

The second semester is actually spent in simulating an office situation. The classroom is organized into different departments of a company. The following documents are prepared: (1) an official organizational chart; (2) a company manual describing the operation of the company, its offices, and its board of directors; (3) the personnel policies of the firm; and (4) an office manual containing sections explaining the operation and function of the office, the forms used in the company, and detailed instructions regarding work stations, duties, and responsibilities. This course should be open only to senior students who have completed successfully two units of typewriting or one unit of typewriting and at least one additional business education course.

A student who successfully completes the simulated office practice class has had the equivalent of one year's work experience without leaving school in a controlled situation where he has experienced many different work roles. He is equipped to go to work immediately upon graduation and should have no difficulty finding a job and in being promoted rapidly thereafter.

TYPEWRITING I

COURSE DESCRIPTION: Instruction is given in the efficient and accurate operation of the typewriter and in the fundamental use and care of the machine. Upon completion of the course, the student will have developed: (1) correct typewriting techniques in handling and operating the machine; (2) correct proofreading techniques; (3) the ability to compose at the typewriter; (4) the development of a mastery of numbers and basic symbol keys; (5) the ability to transfer the skill of typing straight copy rapidly to the skill of typing business papers and forms with the same rate of speed; (6) the ability to set up tables and other statistical material; (7) the ability to follow directions; (8) the ability to use related Business English correctly in production work; (9) the ability to evaluate the work produced; and (10) the ability to develop desirable work habits such as efficient organization of work materials. Typing I should be available to all students on the senior high level who have had no previous typing experience.

Typewriting is the foundation for most beginning clerical jobs. An employee who can type rapidly and accurately can be taught to handle many office jobs and at a higher entry level than an employee who cannot type. The fastest growing field in today's business world is for well-trained clerical workers who can type. With the sophisticated equipment now being used, the development of a minimal skill in typewriting is essential to the student who wants to be trained for tomorrow's world. Students who desire to enter the business world should take the advanced Typewriting II course in order to become more proficient.

TYPEWRITING II

COURSE DESCRIPTION: The ultimate goal of this course is the achievement of the level of an expert production typist. Emphasis is placed on the following: (1) improvement in speed and accuracy; (2) the typing of letter problems; (3) typing business forms, manuscripts, and other business documents; (4) typing for duplication; (5) typing multiple carbon copies; (6) building sustained typewriting power through long periods of production typewriting; (7) building vocational competency through simulated work experience projects involving a typical period of time in a specialized office; (8) learning to handle materials efficiently; (9) learning how to type an employment application form and a personal data sheet; and (10) learning how to follow and carry out instructions. This course should be open to all senior high students who have completed Typewriting I or Business Exploratory, who can type at least 30 words a minute or better, and who have made a "C" average or better in English will be more successful in advanced typewriting than those with lower grades in English.

With the introduction of more and more sophisticated equipment into local offices, the development of typewriting skill to the expert level is necessary for the beginning employee. With such skill, the student will have no difficulty securing and retaining a job in the labor market of today as well as tomorrow. In fact, there is a critical shortage of expert typists in the local area at the present time; and this shortage is likely to continue until such time that better typists can be trained.

CONSTRUCTION TECHNOLOGY COURSES

CONSTRUCTION TECHNOLOGY EXPLORATION

COURSE DESCRIPTION: Students will be given instruction in the care and use of hand and power tools used in the wood construction industries. The student will learn how to read basic blueprints, make basic power tool set-up operations, and will study about forest products.

This course is primarily for tenth grade students. Students in the eleventh and twelfth grades should be able to take the course upon the recommendation of the school counselor.

CONSTRUCTION TECHNOLOGY (CARPENTRY) FIRST YEAR

COURSE DESCRIPTION: This course is designed to involve students in the study of an actual hands-on laboratory experience in the use and care of hand and power tools used in the carpentry trades. Specific processes involve measuring and layout, cutting, boring, fastening, clamping, and sanding of building products. Also students will study about building materials, handling and storage of building materials, building plans, specifications, and building codes and specifications.

Construction Technology Exploration would be helpful to students registering for this course. It should be open to eleventh grade students who are interested in pursuing an occupation in carpentry. However, exceptions should be made for a twelfth grade student who could profit from this course and who would be interested in taking advanced training on the post high school level.

Students taking this course would need further training either at a Vocational-Technical Education Center, post high school, or on-the-job training to be able to enter the job market.

COORDINATED CAREER EDUCATION

COURSE DESCRIPTION: This course is designed specifically for the exceptional student to provide him with meaningful work experience combined with relevant academic courses. A cooperative arrangement between school and employers that permit planned and supervised related instruction and on-the-job training will aid the student in his employability in the world of work. Study and work are structured through half-day attendance at school and half-day attendance on the job, or other arrangements agreed upon and supervised by the school and employers. In most instances, students will receive pay for their on-the-job experience subject to federal and state laws on part-time employment. One period of the student's half-day attendance at school must be devoted to related instruction from the assigned supervising teacher coordinator.

This course should be open to eleventh and twelfth grade exceptional students.

Coordinated Career Education will help the student to adjust in his transition from school to the world of work. Many students will continue employment with their part-time employer after leaving school.

DISTRIBUTIVE EDUCATION COURSES

INTRODUCTION TO MARKETING

COURSE DESCRIPTION: This course is designed as an exploration course in distributive education. Students will explore job opportunities, characteristics of specific jobs, and the necessary skills for a career in marketing and distribution. Content materials deal with the selling of goods, making change, effective display of goods, developing desirable work habits, how to get along with people, etc.

This course should be open to tenth, eleventh, and twelfth grade students. This course would be very helpful to the tenth grade student who plans to take Distributive Education I and Distributive Education II in the eleventh and twelfth grades.

Students taking this course would need further training whether by taking Distributive Education I and Distributive Education II, post high school training, or part-time-on-the-job training to be able to enter the job market on a full time basis. This course is highly recommended for students planning to major in Business Administration in college.

DISTRIBUTIVE EDUCATION I (COOPERATIVE)

COURSE DESCRIPTION: A cooperative training program between school and employer, with the students on-the-job training supervised by a teacher coordinator from the home high school. Released time from the regular school day is provided so that the D.E. student can work in a store for his specific on-the-job training. Students are paid at least a minimum wage and must work a minimum of 15 hours per week in an approved training station. Training stations are approved by an advisory committee selected from the business community.

One hour of related classroom instruction is required of all D.E. Coop students. Related classroom instruction includes the study of salesmanship, store display, advertising, merchandising mathematics, as well as developing specific job skills necessary for success in a student's chosen job field.

This course should be open to eleventh and twelfth grade students who are interested in pursuing an occupation in the field of Distribution, or students interested in majoring in Business Administration on the college level.

Many D.E. students are offered full time employment by their cooperating employer upon graduation from high school. The D.E. graduate will be able to advance more rapidly to management jobs than those students who have had no training in the field of marketing.

DISTRIBUTIVE EDUCATION II (COOPERATIVE)

COURSE DESCRIPTION: A continuation of D.E. I, the same structured program of related classroom instruction and on-the-job training. Special emphasis is given to more sophisticated skills necessary for success in the field of marketing and distribution. Units of related classroom instruction include marketing research, merchandise information, advance merchandising mathematics, and employer-employee relations.

This course should be open to seniors who have taken D.E. I in the eleventh grade or seniors who have had Introduction to Marketing.

Many D.E. students are offered full time employment by their cooperating employer upon graduation from high school. The D.E. graduate will be able to advance more rapidly to management jobs than those students who have had no training in the field of marketing.

DRAFTING COURSES

BASIC MECHANICAL DRAWING

COURSE DESCRIPTION: A study of the fundamentals of mechanical drawing, the use and care of drawing instruments, lettering, alphabet of lines, size and shape descriptions, sketching, and pictoral drawing.

This course is recommended for all students who are interested in engineering or who plan to take courses offered at a Vocational-Technical Education Center in the mechanical or construction fields. The course should be open to tenth, eleventh, and twelfth grade students.

DRAFTING (ARCHITECTURAL)

COURSE DESCRIPTION: Architectural Drafting is a special field of drafting which deals with the preparation of drawings for commercial and public buildings as well as for houses. The planning of any structure requires three things: (1) design of the interior and exterior of the building, (2) preparation of the detailed construction drawings, and (3) written specifications. The student will be involved with drawing complete sets of plans for both residential and small commercial buildings. The plans will conform to local building codes and FHA regulations. The primary objective of this course is to allow the student to explore his interest in the occupational fields of architecture.

The course should be open to eleventh and twelfth grade students who have completed basic mechanical drawing and are interested in exploring architectural drafting. Students who have less than average grades and do not have high mechanical and mathematical aptitudes will find this course difficult unless they are willing to spend the additional time that would be required to successfully complete the course.

Students taking this course would need further training either in college or post high school to be able to enter the job market.

DRAFTING (ENGINEERING)

COURSE DESCRIPTION: This course will provide the student with training centered around the technique of translating the ideas and calculations of engineers into complete and accurate working plans which are used by the skilled craftsman in producing a desired object. The major emphasis of this course is the theoretical approach to drafting and design problems. Drafting skill is taught as a part of the instruction; however, the course is primarily designed to allow the student to explore his interest in the occupational field of engineering and drawing.

The course should be open to eleventh and twelfth grade students who have completed basic mechanical drawing. Only students who have better than average mechanical, mathematical, and physics aptitudes should be considered for this course.

Students taking this course would need further training in college, post high school, or on-the-job training to be able to enter the job market.

DRAFTING (ENGINEERING)

COURSE DESCRIPTION: This course will provide the student with training centered around the technique of translating the ideas and calculations of engineers into complete and accurate working plans which are used by the skilled craftsman in producing a desired object. The major emphasis of this course is the theoretical approach to drafting and design problems. Drafting skill is taught as a part of the instruction; however, the course is primarily designed to allow the student to explore his interest in the occupational field of engineering and drawing.

The course should be open to eleventh and twelfth grade students who have completed basic mechanical drawing. Only students who have better than average mechanical, mathematical, and physics aptitudes should be considered for this course.

Students taking this course would need further training in college, post high school, or on-the-job training to be able to enter the job market.

INDUSTRIAL COOPERATIVE TRAINING COURSES

INDUSTRIAL COOPERATIVE TRAINING I

COURSE DESCRIPTION: A cooperative training program between school and employer, with the students' on-the-job training supervised by a teacher coordinator from the home high school. Release time from the regular school day should be provided so that the I.C.T. student can work for an employer for his specific on-the-job training. Training stations should be approved by an advisory committee selected from employers in the community.

One hour of related classroom instruction should be required of all I.C.T. students. Related classroom instruction includes the study of technical information, as well as developing specific job skills necessary for success in a student's chosen job field. Special emphasis is placed on employer-employee relations, developing desirable work habits, and how to get along with people.

Should be open to eleventh and twelfth grade students who need part-time work to stay in school, or students who could profit more from real experiences of on-the-job training rather than taking specialized job skill training at a Vocational-Technical Education Center.

INDUSTRIAL COOPERATIVE TRAINING II

COURSE DESCRIPTION: A continuation of I.C.T. I. (See Course Description I.C.T. I).

Should be open to seniors who have taken I.C.T. I in the eleventh grade and/or seniors who have successfully completed a vocational skills training course in the eleventh grade within their chosen job field.

*Note: Students coming out of the eleventh grade in-school vocational skills training course should possess entry level employment skills in their chosen job field to be eligible for I.C.T. II. Students changing job fields would need to be placed in I.C.T. I.

* IN THE EVENT THAT VOCATIONAL–TECHNICAL EDUCATION CENTERS ARE DEVELOPED AND IMPLEMENTED AT KEY WEST, MARATHON, AND CORAL SHORES, THE COURSE OFFERINGS LISTED ON THE FOLLOWING PAGES SHOULD BE INCLUDED IN THE CURRICULUM OF THESE CENTERS. IF THE CENTERS ARE NOT PUT INTO OPERATION AS DISTINCT EDUCATIONAL ENTITIES THESE COURSES SHOULD BE INTEGRATED INTO THE CURRENT ACADEMIC SCHEDULES OF THE VARIOUS SCHOOLS.

SUGGESTED ACADEMIC AREAS
FOR PROPOSED
MONROE COUNTY VOCATIONAL–TECHNICAL EDUCATION CENTERS

CAREER EXPLORATION

COURSE DESCRIPTION: By the time a student is ready to enter the ninth or tenth grade, he has developed a tentative interest in a career choice. This may have been self-developed or developed by taking a career investigation course in junior high school. In either case, Career Exploration is designed to allow a student to explore his tentative career choice; by involving him in specifically designed career exploration laboratories where the student is allowed to try out his career choice to see if the work is rewarding, to determine whether he possesses the aptitude necessary for success in the particular occupation, and to see if his interest will hold through the necessary period of exploration.

AREAS OF CAREER EXPLORATION

BUILDING TRADES

Students should be given instruction in the care and use of hand and power tools used by electricians, plumbers, brickmasons, and carpenters. Also, lab exploration projects should be used in these occupations to give the students actual short-term experiences. Students interested in electing one of the building trades course offerings in the eleventh and twelfth grades would profit from taking this course.

COOKING, SEWING, AND DESIGN

This course should offer instruction in the food service and garmentmaking occupations. Students would work on laboratory projects where they would prepare foods and make articles such as clothing, draperies, etc. Students who plan to elect Food Services, Sewing and Design, D.E. Intensive, or Commercial Art in the eleventh and twelfth grades would profit from taking this course.

ELECTRICAL AND GRAPHICS

Students would be given instruction in the care and use of measuring instruments, hand and power tools, how to operate basic machines and how to calculate electrical values, as well as the printers measure. Students who plan to elect Graphic Communications, Electronics, Appliance Repair, and Radio and Television Maintenance in the eleventh and twelfth grades would profit from taking this course.

HEALTH AND COSMETOLOGY

This course is designed to allow the student to investigate his aptitude and interest in working with people.

Students would study medical terms, take field trips and listen to speeches by consultants in the fields of health and cosmetology. Students who plan to elect Health Occupations or Cosmetology in the eleventh and twelfth grades would profit from taking this course.

MECHANICAL

This area of career exploration allows the student to explore the mechanical occupations through laboratory involvement and classroom instruction. Students will receive instruction on mechanics hand and power tools, mechanics measuring instruments, working on two and four cycle engines. He would be disassembling the engine, repairing and replacing needed parts, and reassembling and making it operate according to reconditioned engine specifications. Students who plan to take skill training in the eleventh and twelfth grades in vocational areas of auto mechanics, diesel and industrial mechanics, office machines repair, and auto body repair would profit by taking this course.

METALS AND MACHINES TOOLS

This course is designed to allow the student to explore the metal working occupations. He would receive units of instruction on the engine lathe, drill press, surface grinder, welding, foundry and sheet metal operations. Students who plan to elect Machinist Technology, Machine Tool

Operator, or Sheet Metal Technology in the eleventh and twelfth grades would profit from taking this course.

COMMUNICATIVE SKILLS–GRADES 9 OR 10

COURSE DESCRIPTION: Communicative Skills–9 or 10 is an English course planned and written specifically for vocational students. Lessons are included in grammar, language usage, word study, and semantics. Units in written composition (including outlines, summaries, job records, logs and technical reports) are also a part of the course. Lessons which help students develop oral communication skills (such as making explanations and giving directions) should be included. In addition the course would contain a series of lessons on such practical topics as using the library, learning parliamentary procedure, planning and organizing daily schedules, developing study skills, and learning to read the newspaper. An integral part of Communicative Skills–9 or 10 is a unit of study in reading. Students who can profit from an intensive course in reading would be scheduled for specified periods of time in a reading laboratory, equipped with the EDL L - 100 and L- 300 communications programs or their equivalent.

All ninth or tenth grade students who are enrolled for the first time would take Communicative Skills–9 or 10. They will receive one unit of credit in English on their transcript upon completion of this course, since it will replace the English course they would normally have taken at their home high school. Second, third, and fourth year students who enroll in the Center may take Communicative Skills courses for their grade level at their home high schools.

Effective communication in the world of work is vital to success in almost any job field. Ian Finch, author of General Studies: A First Handbook for Technical Students, said this: "If one's ambition is to stay as a plan workman, with no frills, to look forward to forty years of laboring or semi-skilled work, then there may be little point to English. But neither, for that matter, would there be any point to learning anything at all. If one is keen to learn . . . then an increase in one's effective working knowledge of language, both written and spoken, is vital. Just as your skill and knowledge of other subjects increases so your language ability will need to increase."

COORDINATED CAREER EDUCATION–GRADE TEN

COURSE DESCRIPTION: This course is designed specifically for the student who cannot function in the high school's regular program. A vocational rehabilitation counselor, along with a specialized instructor, should carry each student through an evaluation process to determine and make recommendations as to the assignment of students in the various areas of career exploration. The student will spend 1 ½ hours per day in career exploration and 1 ½ hours per day with the specialized instructor in the C.C.E. classroom. The career exploration involves job sampling in laboratory situations for the purpose of evaluating student behavior in terms of aptitude for the job, stability of interest after a tryout period, etc. The C.C.E. classroom work involves developing acceptable attitudes for successful employment, directly relating skills in communications and mathematics by actually having the students fill out daily work reports, job applications, income tax forms, etc.

The course should be open to educable students who would be eligible for C.C.E. eleventh and twelfth grade programs.

APPLIANCE SERVICE
(VOCATIONAL)

COURSE DESCRIPTION: In this course, students receive instruction in the principles of heating, refrigeration and air conditioning, plus repair of small household appliances. Practical experience in repairing and servicing small and large equipment of this type is an integral part of the lab work. Related mathematics and physics are stressed in the classroom work.

The course should be open to juniors and seniors who are mechanically inclined and indicate a sincere interest in the field. In this day of automated appliances, central heating and cooling in homes and industry, students will find readily available employment as servicemen, installation and servicing for mechanical contractors, and operating one's own business.

AUTO BODY REPAIR
(VOCATIONAL)

COURSE DESCRIPTION: Operations emphasize the development of hand skills and knowledge necessary to be successful in the field of auto repair and refinishing. It would consist of the necessary welding skills, painting, removing dents, and general repair of the automobile body. Related mathe-

matics and applied science should be incorporated into the course.

The course should be open to junior and senior students who show a sincere interest and aptitude for this field as a wage-earning occupation or operating a business of their own. Courses which will prove helpful to students entering this training include vocational orientation, industrial arts, and welding.

In 1972 there was a shortage of qualified auto body repairmen. As our society depends more on automobiles for local travel, particularly during these times of the overburden of traffic on our streets, there is going to be increasing auto body damage. Other job opportunities in the field include those of shop foreman and service manager.

AUTOMOBILE MECHANICS
(VOCATIONAL)

COURSE DESCRIPTION: Operations related to the entire field of automobile repair and maintenance are covered in this course. Among the areas of instruction are electrical systems, carburetors, engine tune-up, engine overhaul, and service management. As students reach a certain level of proficiency, they would gain first-hand experience in restoring defective vehicles to proper operating condition.

The course should be open to junior and senior students who show a sincere interest and aptitude for this field as a wage-earning occupation or operating a business of their own. Courses which will prove helpful to students entering this training include general shop, welding, machine shop, electricity, and industrial arts.

The need for additional qualified automobile mechanics is great and will continue to grow as the number and kinds of vehicles increase. The increasing complexity of automobiles will strengthen the demand for specialists in the years ahead. Other job opportunities in the field include those of shop foreman, service manager, automobile salesman, company representative, owner of service stations, and automobile dealer.

BRICKLAYING
(VOCATIONAL)

COURSE DESCRIPTION: The course is designed to give the student instruction techniques and skills in concrete and masonry occupations. The course would involve itself in blueprint reading, composition and mixing of concrete and mortars, mortar joint and framing construction, and in the use and care of tools of the trade. Students would receive actual experience in mixing and pouring concrete, mixing mortars, laying bricks, concrete blocks, rocks, etc.

The course should be open to juniors and seniors who show a sincere interest and aptitude for this field of study. Students must have good vertical and horizontal visual perception. Mechanical drawing and industrial arts courses would be beneficial to the students' success.

Bricklaying is one of the higher paying construction occupations. Students could enter an apprenticeship program to do commercial work and residential work. The population explosion and expansion of industry assures prospective bricklayers of employment for now and the future.

BUILDING TRADES
(VOCATIONAL)

COURSE DESCRIPTION: The construction industry is one of the largest employers of skilled craftsmen. As our country continues to grow, more jobs for skilled carpenters, brick masons, plumbers, etc., will be created. In addition, the new and improved methods in construction of prefabricated sections will be in demand. This course is designed for the high school junior or senior to develop specific skills in the carpentry trade. They should be given an opportunity to develop some skills in finishing, framing, plumbing, and electrical trades in order to be employed in these areas at the entry level. Second-year students would spend the majority of each class day on the job in commercial or domestic construction. Practical mathematics, blueprint reading, and estimating are a necessary part of the building trade curriculum.

This course should be open to juniors and seniors who show a sincere interest and aptitude for carpentry as a wage-earning occupation. A shortage of carpenters exists according to U.S. Labor Department publications. With the population explosion and resulting demand for more housing year after year, the opportunity for well-qualified people to find employment in this field should remain very good.

BUSINESS EDUCATION–KEY PUNCH TRAINING
(VOCATIONAL)

COURSE DESCRIPTION: Instruction emphasizes the development of the skills necessary to operate a key punch machine and a typewriter with a high degree of efficiency. A key punch operator transfers basic business information or data to a card or a magnetic tape using either an alphabetical or numerical code. The card or tape containing the information can either be stored for later use or put through the computer for immediate reporting. The operator must learn how to verify or check his work and how the cards are used in the computer for reporting purposes. Related work in record keeping and office procedures is incorporated into the course as well as a study of basic business forms.

This course should be open to juniors and seniors who show an interest and aptitude for clerical work. In order to be accepted, the student should have completed at least one year of typewriting and be able to type a minimum of 40 words a minute with a high degree of accuracy. Junior students who plan to enroll in the COE Program in the senior year should be encouraged to enroll in this program in the junior year in order to use the training in the senior year.

As the number of computer installations increase, more and more employees trained to be key punch operators will be needed to fill the openings. At the present time, job openings throughout the state of Florida are abundant. Students trained in this area will also be capable of transferring the training to related operations in a computer center.

BUSINESS EDUCATION–WORD PROCESSING
(VOCATIONAL)

COURSE DESCRIPTION: Instruction would emphasize the development of typewriting and transcription skills necessary to become a successful Magnetic Tape Selectric Typewriter Operator (hereafter known as an MT/ST operator). Training would be given in the operation of a selectric typewriter, a transcribing machine, and the MT/ST. The student would first need to master the selectric typewriter as the MT/ST has a selectric keyboard. The training on the transcribing machine would consist of the student's listening to pre-recorded magnetic belts and transcribing the material on the typewriter as he listens. The material to be transcribed would consist of regular business correspondence and documents as well as medical and legal material. This transcription training

is needed in order to become an efficient operator or secretary. The training on the MT/ST would include recording information, transferring information from one tape to another, coding and retrieving information, and combining two tapes to make one final report. Students would be taught work of organization, the establishment of priorities in an office, and various written forms of communication. Related Business English and office procedures would also be incorporated into the course.

This course should be open to juniors and seniors who show an interest and aptitude for clerical or secretarial work. In order to be accepted, the student should have maintained a "C" average or better. The student should have completed at least one year of typewriting and should be able to type a minimum of 45 words per minute. There is a shortage of employees who are trained in this area in Florida. Students who have an interest in clerical or secretarial work could use this training for an entry job and for rapid promotion thereafter. Another area in which the student may be employed is in an institution such as a hospital where many medical records clerks are utilized. The intensive machine transcription alone would insure a student's being able to secure a good position.

COMMERCIAL ART
(VOCATIONAL)

COURSE DESCRIPTION: The course is designed to give the students instruction in the techniques, skills, and psychological influences of commercial art and its place in the area of advertising. All phases of commercial art would be studied: layout, lettering, illustrations, fashion, magazines, books, industrial and technical illustrations, direct mail greeting cards, brochures, display, cartooning, photography, copy preparation, etc.

The course should be open to juniors and seniors who show a sincere interest and aptitude for this field of study. Mechanical drawing and previous art courses would be advantageous to the student.

Graduates may obtain entry level employment as a sketch artist, interior decorator, fashion illustrator, industrial designer, cartoonist, litho artist, key liner, letterer, paste-up artist, silk-screen artist, fashion designer, technical illustrator, etc. Some employers would include agencies, studios, printers or publishers, retail display and advertising, clothing manufacturers, display companies, commercial manufacturers, etc.

COORDINATED CAREER EDUCATION – GRADES 11 AND 12

COURSE DESCRIPTION: This course would be an especially developed or coordinated curriculum designed for the student who could profit from single or multiple skill training. A vocational rehabilitation counselor, along with the job development and training coordinator, would chart and design individual training plans to fit the needs of the individual student. The individually designed training plan would include single or multiple skill training within one of the Center's vocational areas. Classroom instruction will be taught by the specialized coordinator on employer-employee relations, safety, acceptable attitudinal development, etc.

COSMETOLOGY

COURSE DESCRIPTION: Cosmetology students would receive theory in each phase of cosmetology. Students will learn to perform such skills as cold waving, manicuring, shampooing, scalp treatments, hair cutting, styling, tinting, bleaching, facial treatments, and the care and styling of wigs. The course objective is for the students to develop knowledge, skills, and attitudes which will prepare them for gainful employment in the cosmetology field. The course should be open to junior and senior students who are sixteen years of age or over. Each student should pass a complete physical examination. Students must possess a pleasing personality, neat appearance, satisfactory health record, and a sincere interest in cosmetology as a wage-earning occupation.

The cosmetology profession is flourishing and the licensed operator should enjoy excellent employment opportunities. These may include self-employment, work in a private salon, or with cosmetic manufacturing firms.

DIESEL AND INDUSTRIAL MECHANICS

COURSE DESCRIPTION: This course would provide the students with training and knowledge in fuel injection systems, turbo chargers, engine speed governors, and other components not found in the gasoline engine. The student would learn how to rebuild engines, cylinder heads, and starter systems. He would study the theory related to diesel engines as well as the science relating to the hydraulic system. Care and maintenance of the accessory items used in conjunction with the diesel

should also be included in the course. The course should be open to juniors and seniors who show a sincere interest and aptitude in the field as a wage-earning occupation.

Employment opportunities for diesel-industrial mechanics are expected to increase during the next decade. This rise in employment is expected mainly because of the anticipated growth in the Nation's general economic activity. Most industries that use the diesel engines are expected to expand their activities in the years ahead. In addition, diesel engines will continue to replace gasoline engines in a growing variety of equipment operation and truck driver training.

DISTRIBUTIVE EDUCATION (D.E.) INTENSIVE LABORATORY RETAIL SALES AND MARKET MANAGEMENT

COURSE DESCRIPTION: This is a program of instruction designed to prepare individuals for careers in the fields of distribution, retail sales, and market management. The course would also assist the student in acquiring the essential knowledge, developing the necessary skills, and building the proper attitudes necessary for successful achievement within the field. This course should be open to juniors and seniors who are sincerely interested in sales, marketing, and distribution as a future occupation. This student must also possess the proper aptitude in order to be successful in this occupation.

During the next decade, employment in sales occupations is expected to rise fairly rapidly. It is expected that within this time there will be a need for an estimated 10,000 employees each year in Florida. This anticipated rise in employment results from the rapid population growth, business expansion, and rising income levels. This occupation avails itself to those who are at ease in dealing with people.

DRAFTING

COURSE DESCRIPTION: Drafting will provide the student with training centered around the technique of translating the ideas and calculations of engineers into complete and accurate working plans which are used by the skilled craftsman in producing a desired object. Approximately one-third of the time would be spent studying related mathematics and other related subjects. Upon graduation, the student may begin working as a junior draftsman or continue training at the post secondary level. This course should be open to junior and senior students who show a sincere

interest and aptitude for this field as a wage-earning occupation. A prerequisite for this course should be one unit each of algebra or geometry with minimum grades of "C". Although not required, additional courses in mathematics and physics, plus mechanical drawing will prove helpful.

Today's industries require draftsmen with specific as well as varied abilities, skills, and knowledge in the fields of machine, structural, electrical, mechanical, architectural, topographical, and production illustration. Job opportunities appear to be excellent for draftsmen with ability in these fields.

ELECTRONICS

COURSE DESCRIPTIONS: Electronics provides a thorough study of the theory of electricity, electronics, and electrical circuits. Specific units of instruction include those of vacuum tubes and transistors, measuring instruments, power supplies, audio-amplifiers, etc. This is an excellent course for those students who plan to enter the field of electrical engineering. This course should be open to juniors and seniors who are mathematically and mechanically inclined and who have a sincere interest in this field of study. Only students who have completed Algebra I with a "C" or better average and who plan to take Algebra II in the eleventh or twelfth grade should be considered.

Students completing this course will have an excellent foundation to enter post secondary technical training or engineering in college. Students who do not plan to pursue post-high school training would find available entry level employment in electrical manufacturing wholesale and retail sales, radio and TV servicement, etc.

FOOD SERVICES

COURSE DESCRIPTIONS: This course would cover all aspects of food preparation and service. The instruction would follow a planned procedure by the presentation of theoretical instruction in subjects such as the principles of cookery, baking, and the accounting and purchasing of food. Students would gain actual experience by actually preparing food. Prospective students should have a good attendance record and a sincere interest in the field of food services.

Most employers in food service areas are finding it virtually impossible to find good, capable help. Students will find readily available employment in hotels, motels, cafeterias, drive-in restaurants, etc., as chefs, short-order cooks, waiters, and waitresses or managers of these establishments.

GRAPHIC COMMUNICATIONS (LETTERPRESS AND OFFSET)

COURSE DESCRIPTION: Course content would include instruction in the areas of letterpress and offset printing. Specific units of instruction in each area should be as follows: Letterpress - Linotype operations, letterpress operations, layout, design, copy preparation, etc.; Offset - Camera operations and darkroom procedures, negative stripping, platemaking, press operating techniques, cutting and handling of stock, and operation of bindery equipment. Students planning to specialize in copy composition must be skilled in spelling, word usage, hyphenation, and mathematics. Students planning to be pressmen need a good mechanical aptitude. Some areas of specialization lend themselves aptly to single skill operations.

Students will be able to obtain employment as pressmen, linotype operators, layout and design craftsmen, cameramen, strippers, platemakers, binders and folders, stackers, and paper cutters, etc.

GRAPHIC COMMUNICATIONS (LITHOGRAPHY)

COURSE DESCRIPTION: Graphic Communications includes instruction in the areas of layout, design, and copy preparation. Students would receive actual experience in operating the magnetic and tape cutting composition recorders and justifying reproducers, teletypesetters, and headline machines.

Students should be able to type 40 words per minute and possess average skills in spelling, word usage, and hyphenation. Most commercial printing has been converted from hot type composition. Graduates will find readily available employment as composers, paste-up, layout, and design specialists.

HEALTH OCCUPATION EDUCATION

COURSE DESCRIPTION: New health occupations are appearing and being recognized each day in the total field of health services. New developments in the profession have created a need for more qualified persons in many of the fields of specialization. This course should be designed for the student who has an interest in the specialized fields of nurses aide, orderly, medical assistant, dental assistant, or in exploring the fields to continue his training in more highly technical areas such as registered nurse, doctor, or lab technician.

Junior and senior students who are sincerely interested in health services as a future occupation and who show an aptitude for it should be eligible. Home economics, biology, and chemistry courses would prove helpful to students entering this program. In 1972, health service occupations ranked third among employment opportunities in the nation. It is estimated by 1975 they may rank first. This prediction is an indication of the rapid growth and expansion of health services.

HEALTH OCCUPATION EDUCATION

COURSE DESCRIPTION: This should be a cooperative training program between school and employer, with the students'on-the-job training supervised by a teacher-coordinator. H.O.E. students would be released from school one-half day each school day to work in a cooperating hospital, clinic, or nursing home for his/her specific on-the-job training. Students should be paid at least a minimum wage and must work a minimum of fifteen hours per week in an approved training station. Training stations should be approved by an advisory committee composed of lay people involved in health occupations.

One hour of related classroom instruction should be required of all H.O.E. students. Related classroom instruction should include demonstrations and the study of orthopedics (broken bones), traction, observation and care of a mother during and after labor and delivery, emergency room procedures, lab, central supply, and other specialized hospital departments.

In 1972 health service occupations ranked third among employment opportunities in the nation. It is estimated by 1975 they may rank first. Some H.O.E. students will continue working for their cooperating employer after graduation from high school, others will elect to further their education by going to college, entering nurses training, or lab technician training.

HORTICULTURE

COURSE DESCRIPTION: This course is designed to teach the cultivation and care of plants, shrubs, and trees. Particular attention should be given to landscaping and design. Some of the areas of specialized instruction and application are: floriculture, horticulture and landscape gardening. Students could plan and conduct nursery production.

The course should be open to junior and senior students who show a sincere interest and aptitude for this field of study, or indicate a desire to continue formal education in the field of horticulture or a related area such as forestry.

Students completing this course will find ready employment in Monroe County. There appears to be a great demand for landscaping and yard gardening services.

MACHINE TOOL PROCESSES

COURSE DESCRIPTION: The student would receive instruction in the set-up and use of all basic machines as well as modern up-to-date numerical control and automatic equipment. Provision should also be made to relate to the students the many different materials and processes used by industry. Students should receive classroom instruction and practical experience involving the use of the various precision measuring and testing equipment now being used by the metals manufacturing industries.

Eleventh and twelfth grade students who are interested in this field as a future occupation and who show an aptitude for this should be eligible. General shop courses, algebra, geometry, and drafting will prove useful for students entering this program. Also, students who choose to learn a single skill could profit from this course.

An individual trained in this program has an excellent source of employment in the manufacturing industries of the area, state, and nation. There is a great demand on the state and national level for well-trained persons in this field. Persons possessing backgrounds in machinery operations, mathematics, blueprint reading, and a good working knowledge of the properties of metals will be better able to adjust to the expanding use of numerically controlled machine tools.

MACHINIST TECHNOLOGY

COURSE DESCRIPTION: This course would offer training in working with precision measuring tools, work at the bench lathe, turret lathe, shaper, planer, milling machine, drill press, heat treating, acetylene and electric welding, tool and die making. Students should receive an introduction to an automated numerical controlled (N/C) machine, how to program the N/C, and have some experience with this equipment before completing the two-year course. Each student should also be taught the related work pertaining to this particular occupation which includes mathematics, drawing, blueprint reading, and science.

Junior and senior students who are interested in the machinist field as a future occupation and who show an aptitude for it should be eligible. Pre-requisites for this course should be Algebra I, geometry, and mechanical drawing with a "C" or better grade average.

Graduates may obtain their first employment as an apprentice machinist, apprentice tool and die maker, machine maintenance mechanic, or machine operator. Experience, coupled with the ability to accept responsibility and to lead others, may open opportunities to become foreman, shop superintendent, or toolmaker.

METAL FAB

COURSE DESCRIPTION: This course is designed to give training in all phases of electric arc and oxy-acetylene welding as well as the more advanced techniques such as MIG, TIG, and submerged arc. The student would gain experience in identifying and joining a wide range of metals and should develop the special skills necessary for success in the trade.

The course should be open to junior and senior students who show a sincere interest and aptitude for this field as a wage-earning occupation. Courses in drafting, general shop, and industrial arts are desirable prior to entry into the welding program. Good physical coordination is an essential trait if a student is to become skilled in this field.

Welding has rapidly expanded in recent years and is now used in almost every industry to some extent. Most welding jobs involve production work in the metal products industries; the leading

employers are those manufacturing machinery, automobiles, ships, aircrafts, boilers and tanks, and fabricated structures. A large number of welders work in repair shops that either specialize in welding or do general metal repair work. These areas should provide ample opportunities for well-trained welders.

OFFICE MACHINES REPAIR

COURSE DESCRIPTION: This course is designed to give student instruction in the operation maintenance, and overhauling of office machines. Specific instruction should include electrical and mechanical components of the typewriter, adding machines, calculators, transcribing machines, bookkeeping machines, etc.

The students should have a good mechanical aptitude and above average understanding of basic electrical and mechanical principles. The course should be open to junior and senior students.

Office machines companies are presently having to train their repairmen. Graduates of this course would have a distinct advantage over other prospective employees since companies will not need to train them in basic principles, only short-term specialized training in differences and new developments as they pertain to specific company brands.

SEWING AND DESIGN

COURSE DESCRIPTION: This course is designed to give the student instruction in the techniques and skills of garment making and design. Students would gain experience in dressmaking, tailoring, altering, making children's garments and accessories, draperies, slip covers, and other specialities. Students would also gain experience in designing, pattern making, and pattern grading.

Junior and senior students who have attained a good achievement record in their junior high school home economics course should be eligible to enroll.

Students may obtain employment in commercial or business establishments, garment manufacturing, and tailoring and alteration shops. They may also set up their own business.

BASIC RADIO, TELEVISION, AND ELECTRONIC MAINTENANCE

COURSE DESCRIPTION: In this academic cluster the student would receive instruction in basic radio, television, and general electronic repair and maintenance. Students would receive actual experience in "trouble shooting" including the use of up-to-date testing and repair of equipment.

SHEET METAL TECHNOLOGY

COURSE DESCRIPTION: In this course, students would receive instruction in sheet metal layouts, use and care of hand and power tools, roof gutters and down-spouts, heating, ventilating and air conditioning pipes and ducts and the like. Students would receive actual experience in reading blueprints, using spot welders, power shears, and folders, etc.

The course should be open to juniors and seniors who show a sincere interest and aptitude for this field of study. Prerequisite courses should be mechanical drawing, Algebra I, and geometry.

Graduates may obtain their first employment as apprentice sheet metal workers in the building construction field, apprentice sheet metal workers in a manufacturing plant, or the job shop. Experience, coupled with leadership ability, may lead to opportunities for jobs as an estimator, sales representative, shop foreman, and shop superintendent.

ADDITIONAL VOCATIONAL–TECHNICAL OFFERINGS WHICH COULD BE ADAPTED TO THE NEEDS OF BOTH PUBLIC SCHOOLS, THE COMMUNITY COLLEGE AND THE ADULT POPULATION ARE:

Veterans OJT
Real Estate
Motorcycle Mechanics
Hair Styling for Men
Foreign Auto Mechanics
Marine Navigation
Boat Maintenance and Repair
Lab Technician
Plumbing
Small Business Investment
Small Business Management
Licensed Practical Nursing
Legal Secretary Training
Marine Biology for Commercial Fishermen
Marine Electronics
Medical Paraprofessionals
Geriatrics Nursing

These are courses which survey data reveal to be public needs. E.P.S. makes no recommendations here as to which agency- - the public schools or the community college - - should develop and offer them. The question here is not one of who would like to offer them. It is rather a question of who can best offer them. This can only be decided by open and frank planning sessions between the agencies involved. It should also be noted here that many of the courses mentioned above, can best be offered in a special training center such as an area vocational-technical center.

Should a vocational-technical school be built in Monroe County, the County may also consider a cluster approach to vocational-technical training, clusters, for example, such as those presently being developed in Oregon, Wyoming, and Georgia. Cluster vocational-technical curricula simply refers to the broadening of course offerings so as to include multiple occupational areas under one program. This concept, some believe, offers a much better approach than designing a seperate program for each specific job category. In Wyoming the following eleven clusters were developed:

1. Construction
2. Metal Processing
3. Hospitality
4. Graphic Communication
5. Transportation, Service, and Repair
6. Agricultural Production and Related Occupations
7. Distribution
8. Electricity-Electronics
9. Health, Office, and Family
10. Community
11. Social Service

Monroe County educational personnel involved in vocational-technical training could also benefit from studying the following randomly selected innovations in vocational curriculum development:

1. Two-year Post-High School Curriculum for Teacher Aides (New York University, New York, New York).

2. A Curriculum Guide in Law Enforcement (University Research Corporation, Washington, D. C.).

3. Radiologic Technology -- A Two-year Post-High School Curriculum (St. Louis Junior College, Clayton, Missouri).

4. Curriculum Guide for Urban Development Assistants (Essex Community College, Baltimore, Maryland).

5. Sea Education, a Program for Grades 10-12 (Gateway Borough School District, Ketchikan, Alaska).

6. Natural Resources Conservation (Dutchess Community College, Poughkeepsie, New York 12601).

7. Human Services (Monroe Community College, Rochester, New York, 14623).

8. Fire Science Technology (Ohio Mechanics Institute Evening College, Cincinnati, Ohio 45210).

9. Organization and Administration of the Small Business (Meramec Community College, St. Louis, Missouri 63122).

10. Conservation and Outdoor Recreation (Wabash Valley College, Mt. Carmel, Illinois 62863).

11. Environmental Control Technology, Waste Water and Water Treatment (Waubonsee Community College, Sugar Grove, Illinois 60554).

12. Rehabilitative Medicine Assistants (North Shore Community College, Beverly, Massachusetts 01915).

13. Computer Troubleshooters (Broward Junior College, Ft. Lauderdale, Florida 33314).

14. Radiology Training (Mesa College, San Diego, California 92111).

AN INFORMATION FEED-BACK LOOP

An analysis of data, both quantitative and qualitative accumulated by Educational and Professional Systems during the course of their inquiry into the Monroe County Vocational Education matrix indicates rather broad patterns of unawareness of the availability of programs in the field, locations at which vocational training opportunities were available and, perhaps most significantly, the place of such educational opportunity in providing a definitive career ladder for young people and adults.

A pattern, or more appropriately, patterns, of information dissemination coupled with the means to analyze the effectiveness of such system, is clearly indicated.

Although plans are being drawn, Monroe County in general and its major population cluster, Key West, is handicapped in publicizing its available educational opportunities in the field by the absence of a locally oriented television outlet.

Accordingly, alternative patterns must be employed which, when television publicity is available, may continue to exist as adjuncts. What follows is meant to suggest rather than prescribe. Educational and Professional Systems is well aware of local exigencies that may require modification.

It would seem that if professional vocational leadership is the responsibility of local educational officials, in cooperation with the input of appropriate state units, all aspects of the public school system, as well as those of the junior college would profit by regular inputs from an advisory group drawn from a broad base. The base envisioned here would include representative faculty from career education areas; citizens of the area, particularly those who employ program graduates; administrative officials and such resource personnel as may be indicated. Appropriate consultants should also be engaged on a continuing basis to develop impact and related studies as the advisory body may direct.

E.P.S. emphasizes that keen attention should be paid to ethnic representation. Ethnic sentiments run deep in Monroe County no less than elsewhere in the nation and many black and Spanish speaking citizens feel that they are under-represented in general.

Selection of membership is more important than the size of the body which should hold regular and advertised public meetings with opportunity of inputs from interested citizens. Local press coverage would be a critical element in disseminating pertinent information.

A Model Structure Could Be as Follows:

Chairman

Drawn from the office of the Superintendent of Schools

Co-chairman

Drawn from the administrative staff at Florida Keys Community College

Teaching–Faculty Representatives

Insofar as may be practicable, representatives from most of the career education disciplines available or projected should be included. Appropriate representation to be given to geographic areas within Monroe County, such as Key Largo, Marathon, etc.

Local Government Representation

An interested governmental official at the decision-making level from both Key West and Monroe County government should be included.

Citizen Representation

Local citizenry should be represented in a number essentially the same as those from the total of other areas indicated above. Employers, parents and those whose interest is simply that of the future of Monroe County, should be included. It would be advisable, in the view of Educational and Professional Systems, to include one member from outside the county whose qualifications incorporate professional status of a recognized level. This person might well be drawn from a baccalaureate degree-granting institution such as Florida International University. The presence of such a person would help ensure a minimum of purely parochial considerations.

It must be stressed, and repeatedly, that the role and function of this group is solely advisory without administrative or legislative authority, and does not in any way pre-empt that of legally constituted officialdom. It should also be made clear that the group and its role is one of deep significance to the total fabric of Monroe County and that the service rendered by such a body is of incalculable value to the area and that its influence on public opinion formation and ultimately, official action, can be significant.

Illustrative Action Agenda

Some of the concerns that might be identified for group consideration follow. Additional items will emerge from these considerations.

1. Identification and description of training needs in occupational areas.
2. Suggest goals for vocational education.
3. To evaluate effectiveness of on-going programs.
4. To provide a reservoir of speakers to Rotary, Kiwanis, Lions, etc., projecting a favorable image of career education to leadership and enlist their support in seeking improvement.
5. To communicate with appropriate bodies, including public information media, State Department of Education, etc.
6. To aid in the direction of the serial occupational newsletter to be given as wide circulation as practicable across the county to teachers, students (both actual and potential), employers and others to broadcast the riches of the available program, its future, the dignity of career education, etc. One essential element would be a continuing invitation for comments from its readership and personal response in the name of the group to each respondent. A total "information system" utilizing the no-cost publicity features of the U.S. Department of Labor, Health Education and Welfare which dramatize the dignity and meaningfulness of career education should rank high in the priorities of this group.

   Members should be encouraged to serve as speakers before civic groups, etc. to educate citizens as to the totality of career education as preparation for the dignity of the world of work.
7. To seek continuing updated interest inventories as follows:
   a. Are the vocational programs offered in the public school system and through the junior college to provide for the full range of interested vocational students?
   b. Are the occupational plans and interests of the students congruent with manpower needs in Monroe County?
   c. Are enrollments commensurate with interests?
   d. To what extent do citizens hold favorable attitudes toward vocational education?

e. What are the aspirations of parents for their daughters and sons?

f. To what extent are citizens interested in adult vocational education for themselves?

8. To continually monitor the program.*

SUMMARY

What has been described in this section as an "Information Feed-Back Loop" will be of incontestable value in continually updating the Monroe County Survey prepared by Educational and Professional Systems, Inc.

Critical to the viability of the program is the advisory plan, holding well publicized scheduled meetings and particularly the periodic newsletter as a communication device.

*An excellent guide which may be followed by those concerned with this important facet of reviewing program effectiveness which E.P.S. suggests be examined is: Locally Directed Evaluation of Local Vocational Education Programs: A Manual for Administrators, Teachers and Citizens. Third edition, Department of Secondary Education and Curriculum. College of Education, Michigan State University. East Lansing, Michigan. 1970. pp. 30

THE ROLE OF THE COMMUNITY COLLEGE

The most striking recent structural development in higher education in the U.S.A. has been the phenomenal growth of community colleges.

Among the explanations for the rapid advance of the community colleges are their open-admission policies, their geographic distribution in many states, and their usually low tuition. They offer more varied programs for a greater variety of students than any other segment of higher education. They provide a chance for many who are not fully committed to a 4-year college career to try out higher education without great risks of time or money. They appeal to students who are undecided about their future careers and unprepared to choose a field of specialization. And, last but by no means least, they provide an opportunity for continuing education to working adults seeking to upgrade their skills and training.

Many of the public 2-year colleges have gradually developed a broader concept of their role, recognizing that if they were to provide meaningful options for students who had not yet made a firm career choice they must offer academic, general, and occupational programs. They also began to meet the need for programs of education for adults. Thus, community colleges as comprehensive public 2-year colleges offer academic, general, occupational, remedial, and continuing adult education.

Occupational programs in community colleges are constantly increasing in scope and variety. The larger and more complex the labor market, the more varied the occupational curriculums of the community colleges are likely to be. With this thesis in mind E.P.S. would make the point that Florida Keys Community College is located in an area where a large number of highly sophisticated skills are unnecessary in order for an individual to enter the labor market. The college should continue to be involved in any county or area-wide plan for career education. A good nucleus of general academic and occupational offerings now available at the college and a primary concern should be that of developing additional occupational programs in order that a wider variety of courses will be available. These should include two-year programs and short-term and occupational renewal programs. Flexibility in offerings and scheduling is essential in order that occupational programs will adjust to changing manpower requirements; and the career-ladder approach, which will enable the student to obtain more advanced training as a working adult.

Technological change is likely to be as rapid in the next few decades as it was in the 1960's. To adapt to this change, the average adult may have to shift his occupation three or four times during his work life and undertake continuing education at various intervals to protect himself against

educational and occupational obsolescence. Moreover, outservice training is becoming the most prevalent type of employer-sponsored training, and much of this training can be provided by institutions of higher education, including the community college. Not all outservice training is aimed at upgrading the individual's specific occupational skills. In many communities throughout the Nation, for example, outservice training is being provided in community colleges for policemen and firemen to give them a broader understanding of community problems.

Continuing educational programs for adults should include not only occupational courses but also courses designed to provide for general educational development. In addition, the community college should become a center of cultural enrichment.

It seems plausible that a coordinated vocational-technical sequence can be developed in the appropriate vocational fields such as marine related occupational endeavors, hotel and motel services and health related career opportunities.

An example is the following sequential occupational training ladder in the general area of marine oriented vocational-technical training:

ELEMENTARY GRADES

Basic Exploratory Activities

JUNIOR HIGH SCHOOL

Career Awareness and Development Activities

SENIOR HIGH SCHOOL

Career Orientation and Basic Skills Development Including:

1. Construction Technology
2. Mechanical Drawing
3. Drafting
4. Diesel and Industrial Machines
5. Basic Electronics
6. Machine Tool Process
7. Machinist Technology
8. Radio, Television and Electronic Maintenance
9. Sheet Metal Technology
10. Basic Welding

COMMUNITY COLLEGE

Development of Sophisticated Skills for Specific Vocational Application Including:

1. Advanced Construction Technology
2. Advanced Drafting

3. Propulsion Systems
4. Hull Drafting
5. Sheet Metal Drafting
6. Electric Theory
7. Marine Engineering
8. Advanced Engineering Drawing
9. Basic Metallurgy
10. Static Motor Control
11. Marine Electrical Systems
12. Advanced Radio and Television
13. Electronic Instrumentation
14. Marine Electronic Components
15. Retraining-updating skills
16. Continuing Education

The Community College can play a vital role by exploring avenues for implementing its continuing education activities. In all cases there should be an awareness of the need to so structure academic scheduling in order that the needs of the general adult population may be met.

The college staff should be increased in keeping with the needs of the program. The need for additional physical facilities and equipment will also be directly dependent upon the specific direction that is taken in the implementation of a more comprehensive career education program.

The philosophy of career education involves education, training and work experience and is also based upon the "upward perculation" of the labor force. It should constitute a "career ladder" approach wherein the individual can enter into the beginning level through various means but preferably through beginning the specific educational and training experiences. It must be recognized that many students will not avail themselves of the opportunity of taking part in the more sophisticated post high school vocational-technical programs, thus, they must be given enough of the basic specific occupational orientation in high school so that they may be better able to find employment in related fields immediately upon the completion of high school. The retraining of adults constitutes an essential consideration in the total career education picture.

ADULT EDUCATION

The survey data described in a previous section clearly reveal the diversity of the public school vocational-technical offerings, though, as was previously stated, not so diverse as public sentiment would like. The data also clearly reveal a youth accented total program, since all but seven of the courses are offered during the day in public schools. Adults understandably, for many psycho-social reasons, do not feel comfortable in such youth-dominated learning environments and will, as they are doing in Monroe County, avoid becoming involved in any. Courses taught during the day by a high school teacher to high school students are similar in little more than name only to courses taught during the evening by a qualified adult education teacher to pragmatic, utilitarian, mature adults. But though adults will shun youth-oriented programs carried on in what are and have been youth-dominated, tightly controlled environments, they will eagerly attend vocational-technical schools, where heterogeneous age groups, relaxed informal instruction, schedules to fit individual needs, and larger instructional blocks of time are the rule rather than the exception. Witness, for example, the tremendous success of the Lindsey-Hopkins vocational school in Dade County, Florida. Such a center, though, of course, on a much small scale, is sorely required in Monroe County, and should be located in the area of greatest present and future needs–the lower Keys, especially Key West. More than eighty percent of the untrained, undereducated, unemployed, under-employed, skill-less people reside there. It logically follows that their training center- - if one is to be built - - should also be there. Without such a center many of these people will remain locked in a subsistence-level life style. In the long run, it will cost less to properly train these people in an adequately equipped vocational center than to leave them untrained. According to State Advisory Council on Job Training, the average cost of $1,716 to train a skilled worker is returned to society through additional taxes collected from the worker's increased income within 1.3 years. After 1.3 years society reaps increasingly more benefits, something it can never do from the earnings of the unemployed or poverty-stricken.

Monroe County should increase its vocational-technical opportunities for adults. It can do so by expanding its evening school program and by making a wider range of regularly scheduled courses available to adults. In view of the presence of a large number of retired or semi-retired citizens in the Key West area it is recommended that the provision of both vocational and avocational programs would be most appropriate. Both the secondary schools and the Community College can make non-credit vocational and avocational courses, workshops, seminars, etc. an integral part of their community service outreach.

In addition to vocational and avocational technical or skill training comprehensive centers, should they become a reality, would provide a vehicle which would enhance the total cultural

and educational growth of citizens residing in Monroe County. The philosophical underpinning of the American system encourages education of the whole individual, rather than the development of isolated unrealistic patterns of formal training.

From the mainstream thrust of vocational-technical training Monroe County vocational-technical centers would provide the spin off benefits of basic and intermediate illiteracy training facilities, helping to remove the adult learner from the regular public school classroom setting which is often identified with personal failure and boredom. Under educated adults seem to be more highly motivated when learning can be associated with immediate need satisfaction.

Andrew Hendrickson, in his discourse of "Problems and Issues In Career Education for Adults," has succinctly defined the task of any endeavor in adult education as essentially a renewal, re-training and readjustment function. It seems imperative that any major attempt to provide a comprehensive vocational-technical educational program in Monroe County should include provisions for formal and informal learning experience for adults.

SUMMARY OF MAJOR RECOMMENDATIONS

The following represents a capsule summarization of the major recommendations of the total survey. All items indicated below, and others, are documented within the body of the report itself.

1. A comprehensive K–14 Career Education Program should be implemented in the Public Educational Institutions of Monroe County.

   It is strongly recommended that there be established a county-wide vocational-technical program which should include comprehensive centers at Key West, Marathon, and Coral Shores as well as at Florida Keys Community College; all of which have been officially designated by the State as vocational centers.

   Due to the peculiarity of geographical and logistical considerations, the State Department of Education should recognize the uniqueness of the Monroe County School District and be willing to allocate additional funds for an improved vocational-technical program. The state must realize that some duplication of courses and programs may be necessary.

   Due to the unusually high cost of securing property in Monroe County it is essential that the State provide additional funds in order that this program may become a reality.

2. An ongoing coalition of Public School, Community College, and business and labor leaders (among others) should be formed not only for the obvious reasons of community relations but for the not so immediately apparent purpose of broad community involvement in the development and implementation of the total educational endeavor in Monroe County of which vocational-technical education is an integral part. This recommendation overlaps but does not duplicate other items in this summary.

3. A comprehensive community information program should be instituted throughout Monroe County that is designed to inform parents, teachers, administrators, and students as well as the general populace, of the philosophy, structure, and organizational pattern of the totality of the vocational-technical education program. Important in its own right, this could be a function of recommendation number 2 above. This is identified in the report as an "information feed-back loop."

4. As documented in the report, school and college enrollment projections indicate that by 1980 employment in Monroe County will approximate 19,000 jobs. Related projections reveal that total population in the county will increase modestly but steadily. By 1980 the total population for Monroe County will range between 54,500 and 57,000. The city of Key West alone will grow to a population in the range of 28,600 to 30,000.

   The Educational and Professional Systems' population projection for Key West indicates what might be regarded as a slight increase through the year 1980. This is due in great part to the failure on the part of the city of Key West to extend its city limits.

The areas immediately adjoining Key West are well populated and constitute a distinct potential for growth by annexation within five years.

There are indications that the economy of Key West is not being affected adversely by a possible military deemphasis. Enrollment in the Key West schools for example has increased by 700 students during the 1972-73 school year, despite the loss of 468 military dependents.

5. The current vocational oriented programs offered by the County School System and the Florida Keys Community College should not be curtailed. The program should be broadened in line with the philosophy of career exploration and development.

Responsibility for vocational-technical education in Monroe County should be as follows:

MONROE COUNTY SCHOOL BOARD

To make possible:

A grade K–5 program designed to create an awareness and a respect for work;

A grade 6–8 program to provide exposure to the whole spectrum of employment through a career exploration program in which students will explore work possibilities and determine a future course of action.

A grade 9–12 preparatory job training vocational-technical program for students which provides a significant breadth of vocational-technical education so that any student, regardless of ability, can be trained for the world of work.

FLORIDA KEYS COMMUNITY COLLEGE

To provide a post secondary technical program for those students who have graduated or have otherwise terminated their normal secondary school program of studies and who want to enter the technical fields. The college should continue to emphasize advanced technical training such as the program of marine propulsion technology.

The public schools and the community college should develop a cooperative program in adult vocational education to serve those adults who need retraining or upgrading of their present skills.

It is noted, however, that the Florida Keys Community College, a state designated vocational center, may not be able to meet certain needs of the upper Keys. However, beyond the public school system of Monroe County the role of the local community college in an era of technological change is supported and a possible shift in emphasis is recommended through an identification of exploratory activities.

6. Vocational training for the totality of marine industry in Monroe County and, indeed, in all probability, for all of South Florida should be expanded. Educational and Professional Systems strongly suggests that this recommendation be given serious consideration as an addition or supplement to the county-wide program. The uniqueness of the climate and proximity to water, the Under-Sea Park, etc. are plus factors for career education that have only been scratched by the marine propulsion curriculum of the Florida Keys Community College. The interest of nearby institutions and various aspects of the marine sciences- - while academic in total thrust- - constitute valuable resources upon which to draw. The institutions identified here which have related academic programs include: Florida Atlantic University at Boca Raton, the University of Miami, Nova University at Ft. Lauderdale, as well as those of the new State Institution in Miami, and Florida International University.

The marine industry can be expanded in Key West because of three specific job markets:

(A) The military market,
(B) The commercial fishing industry and brother "business" boat and ship runs,
(C) The pleasure craft market, among others.

Key West occupies a totally unique position in being at the southern tip of the United States and being almost totally surrounded by water. A Naval base has been located there for over a century and while its character may change in the years immediately to come, it will leave a residue of interest upon which to capitalize. Key West has been an important commerical port and will continue to have some export-import activity. The shrimp fishing fleet from as far north as Virginia uses it as a home port for part of the year; the coastwide shipping industry calls at Key West; pleasure craft, many of them permanently based locally, as well as party boats and commercial deep-sea fishing sport boats operate out of the Keys. Coast Guard facilities will likely be located there for an indefinite period and the skills utilized in servicing and building non-military craft can be utilized by all of these in time of emergency. In the immediate future, the proposed car-passenger ferry service to Mexico will provide additional stimulus to the totality of water-borne industry. It is the judgment of Educational and Professional Systems that a bold and imagination capturing program is indicated.

Again, cognizant of the geographical configuration of the area and taking into consideration logistical reality, a floating vocational-technical laboratory should be established. A surplus military service vessel, probably of the amphibious variety, could be obtained and outfitted with appropriate equipment and related appurtenances necessary to provide a full range of general machine and workshop training. Welding, mechanical, electric and electronic skills should also be taught among others.

While regularly enrolled students would have priority during normal school hours, the facilities should be made available to adults during the evening.

Since there are three State designated centers in Monroe County in addition to the Florida Keys Community College (Key West, Marathon, and Coral Shores), the Mobile Laboratory could be moved in accordance with academic schedules and docked in Key West for use by the Public Schools and the Community College, in Marathon, Coral Shores, or at any other feasible dockage facility in Monroe County.

Interest in this proposed plan would seem to be its ability to incorporate not only an innovative cluster of vocational offerings, but to provide valuable opportunities to students to participate in the practical applications of technical skills related to the operation and maintenance of the water-borne training center as well as other more formally presented marine training.

The publicity attendant upon this creative educational move would in itself stimulate interest in the totality of career education, which would in and of itself justify most of the effort in its development.

This is one means of capitalizing upon the uniqueness of the area–turning problems of transportation and those of providing service to scattered clusters of population to a distinct advantage.

In summarization, it cannot be overemphasized that there exists a critical need to develop and implement a strong vocational program in the area of total marine industry in general and fish-related industry in particular. The urgent and immediate need in the Monroe County area for trained employees in all areas of the fishing industry would be met by this program.

The State, working with the School District should authorize and fund a pilot program during the 1973-74 school year that would train students to work in these industries. It is noted likewise that aquaculture has limitless possibilities.

7. Vocational opportunities for women should be broadened with alternatives which extend beyond those provided by the current home economics and business education programs.

8. A significant increase in adult basic education and vocational-technical training opportunities for adults is recommended. The use of programmed materials is strongly supported. The most critical challenge facing adult educators lies in the improvement of the quality of adult interpersonal behavior, a complex of affecting, cognitive and psychomotor problems. Programmed instruction offers a total learning experience in the best socratic and tutorial tradition. Abolition of the military draft has already caused a decrease in regular college enrollments and will bring about an increased need for skills training for more young people.

9. Because of the magnitude of the total vocational-technical training endeavor that should be instituted in Monroe County it is recommended that two supervisory positions be created in this general field as follows:

   (A) Supervisor of Adult and Community Education.
   (B) Supervisor of Vocational-Technical Education.

10. In addition, there will need to be developed a program in staff development and in-service education to elevate the competencies needed by the teaching faculty based on specific competencies and skills. This group will be challenged to initiate and develop new and innovative programs.

11. The Monroe County District should analyze the total effectiveness of its present pupil personnel service in order that appropriate emphasis may be placed on the total universe of vocational education for tomorrow's world.

    This will necessarily require intensive staff development activities for all vocational counselors in the K–12 program.

12. Although touched upon in some of the recommendations above and throughout the body of the report itself, students and parents evidence a comprehension of career education in Monroe County that ranges the spectrum from an absence of awareness of available opportunities, through apathy. Concrete and immediate steps should be taken to correct this situation and appropriate recommendations are made.

13. Employment opportunitites and the attitudes of employers, an elusive but deeply significant paramater, as well as analysis of job categories for which pre-entry training is relevant, point to a reshaping of the total curriculum and redefinition of responsibilities. Samples of model curricula are presented in detail in the main document.

    It is evident that there is a marked need for the training of additional prospective employees in the broad service areas such as those of institutional management, short courses in hotel-related services, secretarial, clerical service, and several areas of the allied health professions.

    Educational and Professional Systems also notes that there is a definite place for orientation courses and basic preliminary training courses in order that an individual may qualify as a receptionist or for other secretarial work. All enrollees in business education need not complete a total curriculum of basic and advanced courses. It is the view of the investigating team that there should be a minimal elementary program incorporating such rudimentary skills as typing, filing, etiquette, and related office skills that will serve to qualify a young person for basic employment, followed as need indicates by a second phase which should needfully involve a more elaborate program of studies for those who plan to prepare for employment at a more sophisticated level.

14. Serious consideration should be given to ethnic and Spanish-speaking population clusters in the area in order to alleviate the frequently encountered sentiments referring to "under-representation," "unresponsiveness," etc. This is not to be construed as criticism. Disparate citizen articulation is difficult to validate. Nevertheless, these sentiments were frequently encountered. Specific suggestions are submitted for their alleviation.

15. Although not in and of itself a formal "recommendation," the investigating team feels that the Monroe County School District should be commended for its leadership in anticipating the emerging significance of the totality of career education in several ways, most noteworthy being the conference at Duck Key in October 1972. This vision augurs well for the future of education, the economy, and the total citizenry of Monroe County.

GENERAL ECONOMIC DATA

MONROE COUNTY, FLORIDA, 1960

General Characteristics	Cape Sable Division	Key West Division	Lower Keys Division	Upper Keys Division	Total
POPULATION					
Total	106	33,956	5,733	8,126	42,921
Sex: Male	74	18,872	3,570	4,265	26,781
Female	32	15,084	2,163	3,861	21,140
Race: White	105	29,954	5,568	7,325	42,952
Negro	1	3,827	145	797	4,770
Other	0	175	20	4	199
Age: Median age					
% under 18 years	n.a.	n.a.	n.a.	n.a.	32.1
% 65 years and over	n.a.	n.a.	n.a.	n.a.	5.6
In group quarters					5,266
HOUSEHOLDS					
Total					
Number	62	9,110	1,444	3,128	13,744
Population	106	29,921	4,544	8,084	42,655
Persons per household	1.7	3.3	3.1	2.6	3.1
Negro and other races					
Number of households	1	1,089	44	271	1,405

Source: U.S. Department of Commerce, Bureau of the Census, Census of Population: 1960, Vol. 1, Characteristics of the Population, Part 11, Florida (Washington: Government Printing Office).

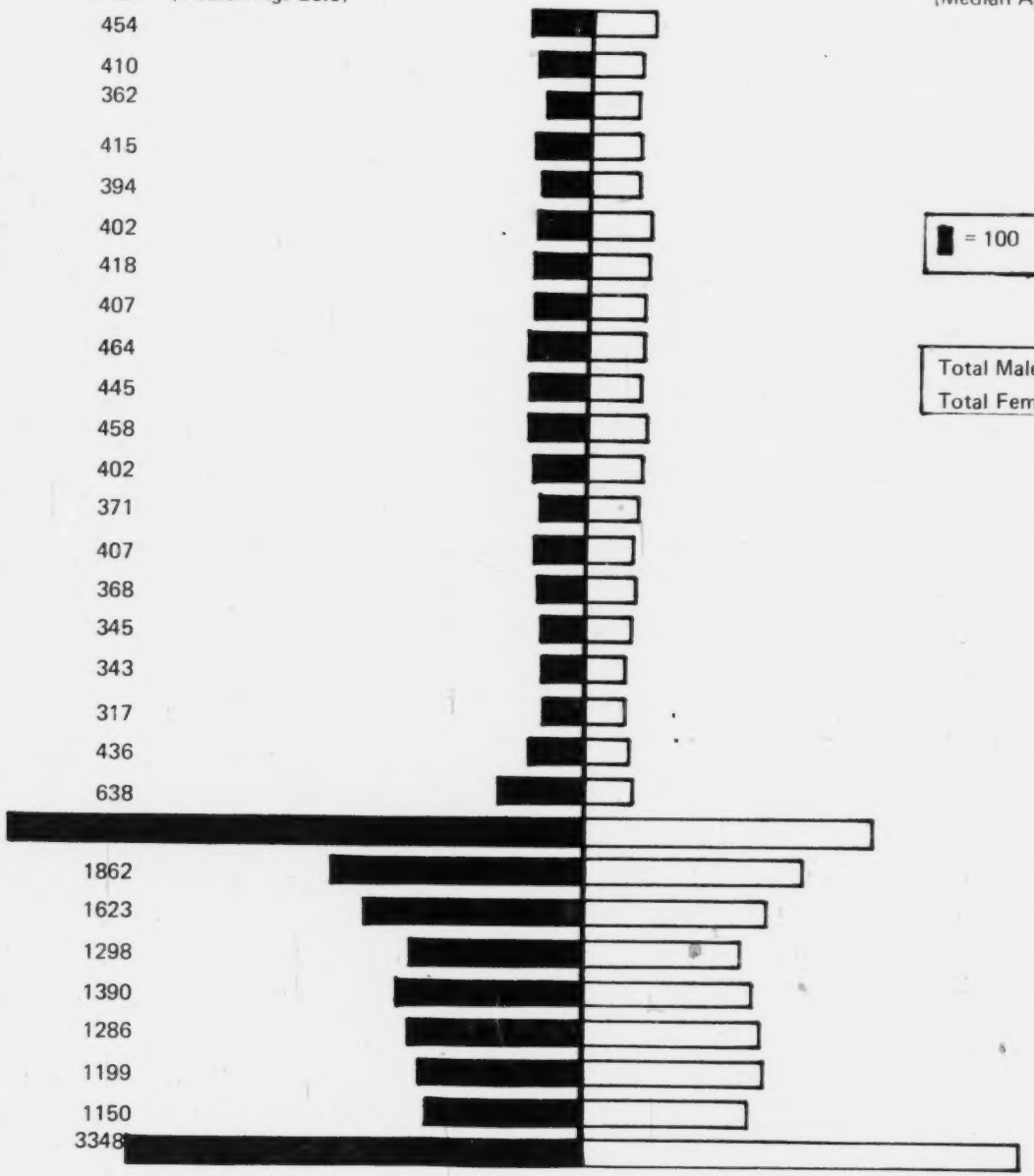
POPULATION BY RACE AND AGE GROUP FOR MONROE COUNTY
APRIL 1, 1960 and 1970

	1970	1960
TOTAL		
Number (1,000)	52.6	47.9
Percent change, 1960-70	9.7	
Percent increase, 1960-70		60.0
PERCENT		
Negro and other	9.3	10.4
Under 18 years	29.9	32.1
18 to 64 years	61.6	62.3
65 years and over	8.5	5.6
Fertility ratio[a]	37.6	52.9

[a]Children under five years per 1,000 women 15 to 49 years.

Source: U.S. Department of Commerce, Bureau of the Census, 1960 Census of Population, General Population Characteristics: Florida, Final Report: U.S. Department of Commerce, Bureau of the Census, 1970 Census of Population, General Population Characteristics: Florida, Final Report PC(1)-B11.

MONROE COUNTY WHITE POPULATION BY AGE AND SEX--1970



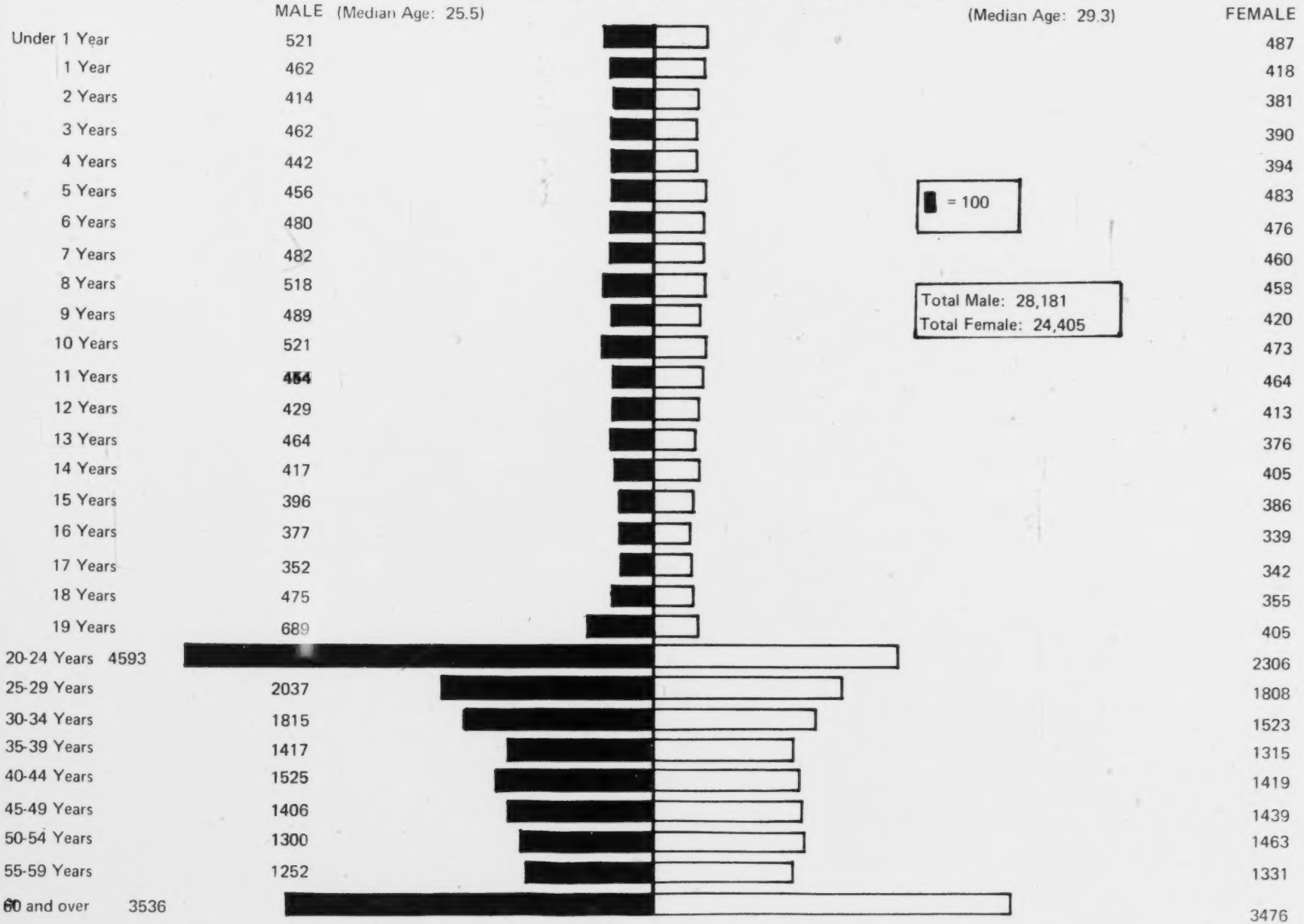
POPULATION, BY SEX AND RACE, MONROE COUNTY, FLORIDA
APRIL 1, 1960 AND 1970

	1970	1960	Percent Change
MALES			
Total	28,181	26,781	5.2
White	25,652	24,134	6.3
Negro and Other Races[a]	2,529	2,647	-4.5
FEMALES			
Total	24,405	21,140	15.4
White	22,038	18,818	17.1
Negro and Other Races[a]	2,367	2,322	1.9
TOTAL	52,586	47,921	9.7

[a]Includes Indian, Japanese, Chinese, and Fillipino.

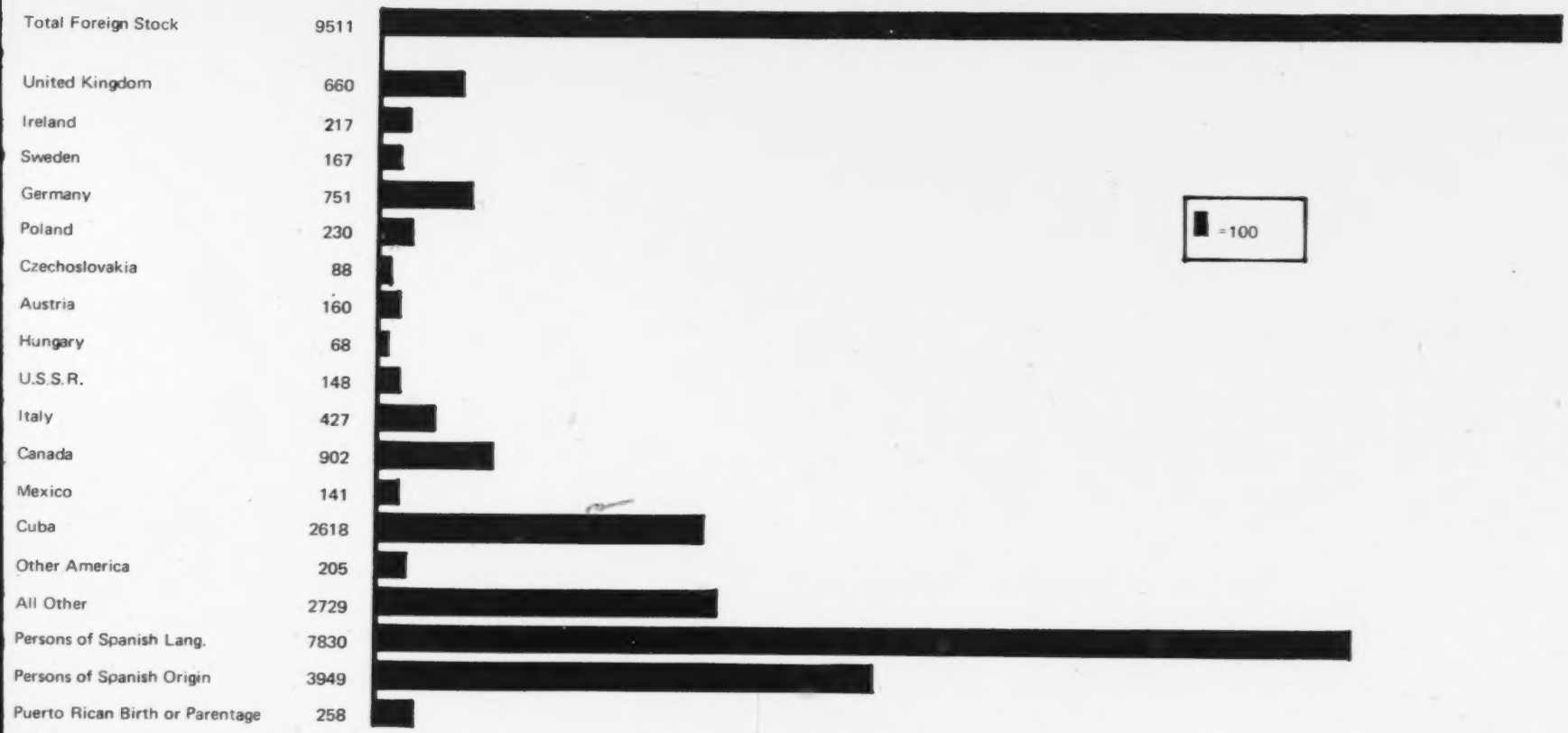
Source: U.S. Department of Commerce, Bureau of the Census, 1970 Census of Population, General Population Characteristics: Florida, Final Report PC (1)-B11, U.S. Department of Commerce, Bureau of the Census, 1960 Census of Population, Characteristics of the Population, Part II, Florida.

MONROE COUNTY POPULATION BY AGE AND SEX--1970

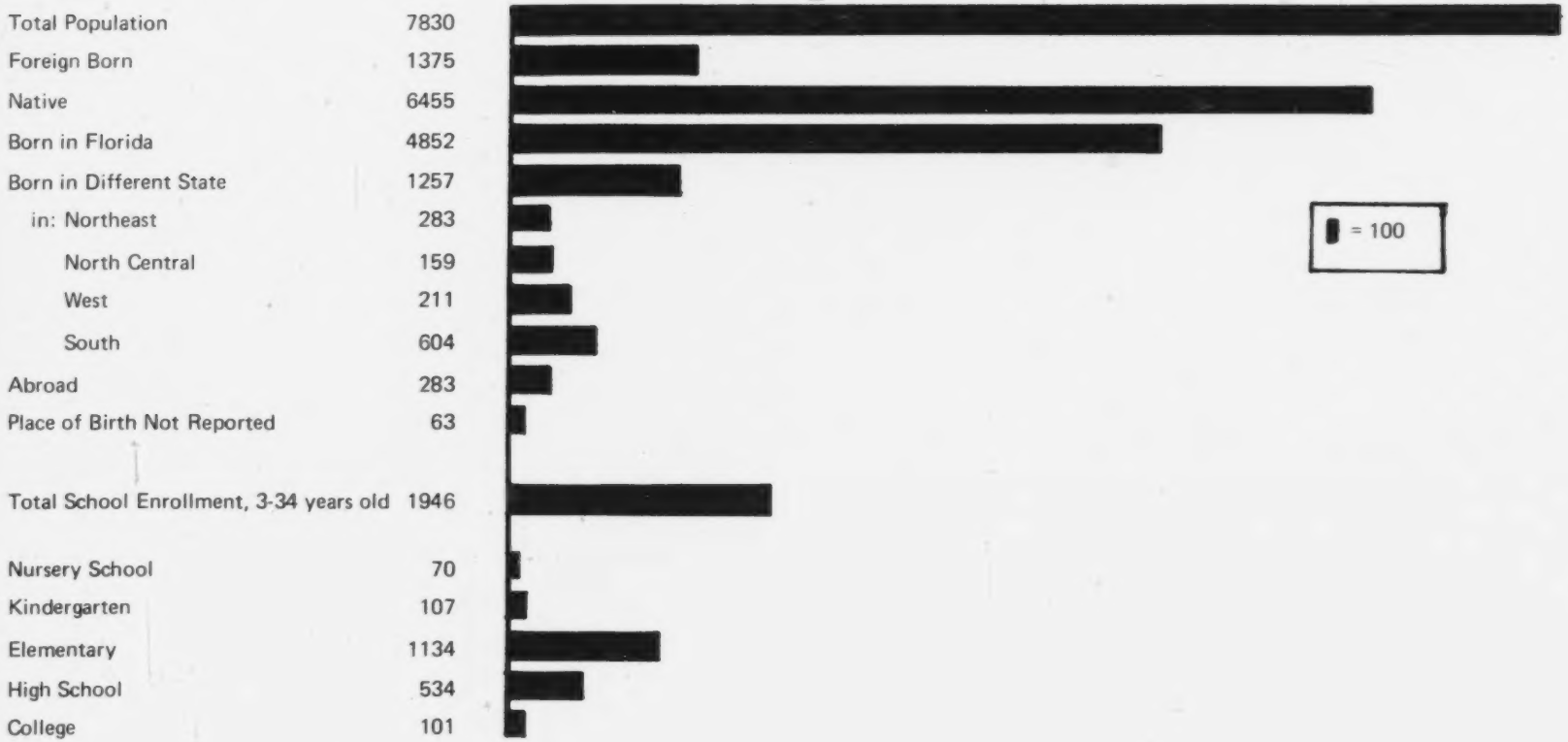


COUNTRY OF ORIGIN OF MONROE COUNTY

FOREIGN POPULATION--1970

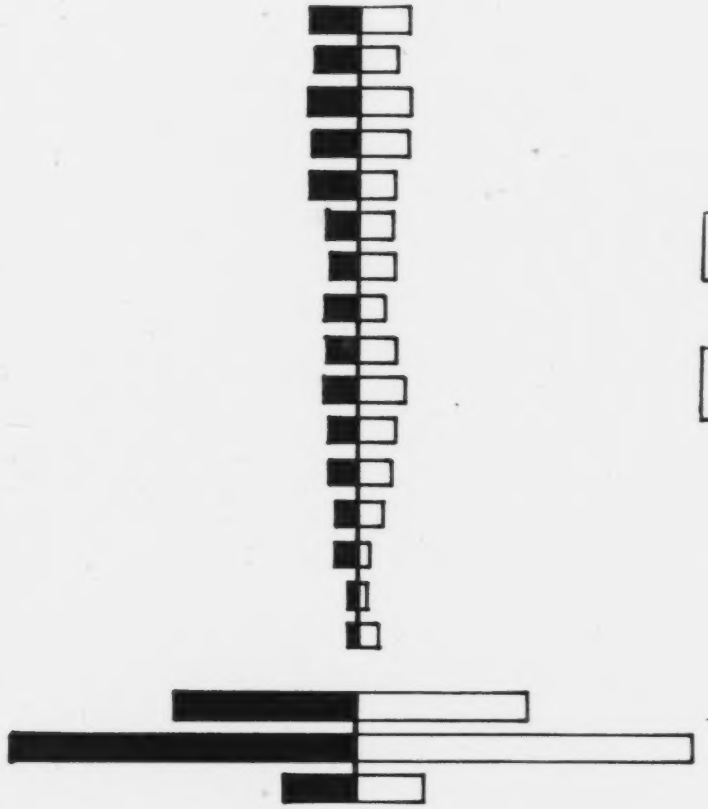


PLACE OF BIRTH AND SCHOOL ENROLLMENT OF
MONROE COUNTY PERSONS OF SPANISH LANGUAGE--1970



MONROE COUNTY SPANISH SPEAKING POPULATION

BY AGE AND SEX---1970



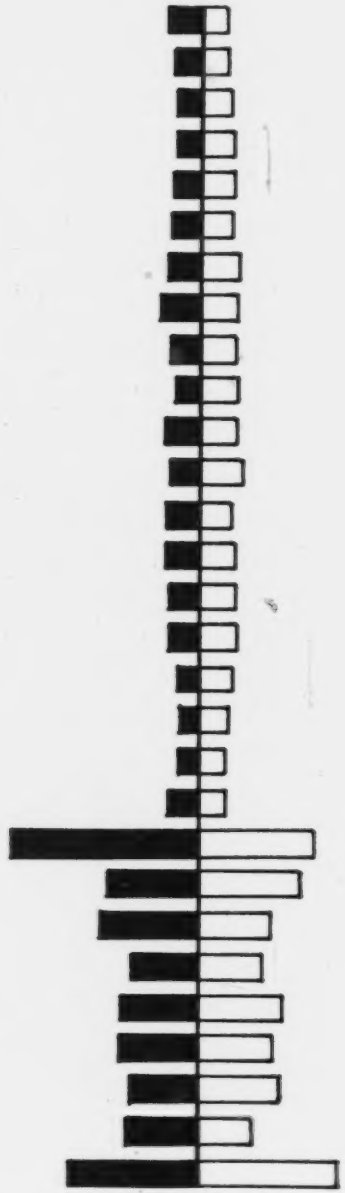
	MALE	FEMALE
Under 5 Years	372	331
5- 9 Years	319	286
10-14 Years	396	370
15-19 Years	362	348
20-24 Years	386	280
25-29 Years	245	229
30-34 Years	219	248
35-39 Years	248	191
40-44 Years	245	240
45-49 Years	277	310
50-54 Years	214	265
55-59 Years	223	226
60-64 Years	185	164
65-69 Years	171	96
70-74 Years	72	88
75 and Over	92	132
Under 18 Years	1355	1202
21 and Over	2516	2418
60 and over	520	480

Median Age: 28.6

Median Age: 31.2

MONROE COUNTY NEGRO POPULATION BY
AGE AND SEX--1970

	MALE	FEMALE
Under 1 Year	52	33
1 Year	42	34
2 Years	41	42
3 Years	39	44
4 Years	41	44
5 Years	48	44
6 Years	54	52
7 Years	63	49
8 Years	45	45
9 Years	39	32
10 Years	53	48
11 Years	48	60
12 Years	52	43
13 Years	54	48
14 Years	46	49
15 Years	48	57
16 Years	32	46
17 Years	33	43
18 Years	36	39
19 Years	45	38
20 - 24 Years	275	166
25 - 29 Years	137	155
30 - 34 Years	142	108
35 - 39 Years	93	98
40 - 44 Years	109	133
45 - 49 Years	111	111
50 - 54 Years	97	122
55 - 59 Years	100	84
60 and Over	184	206



(Median Age 23.0)

= 20

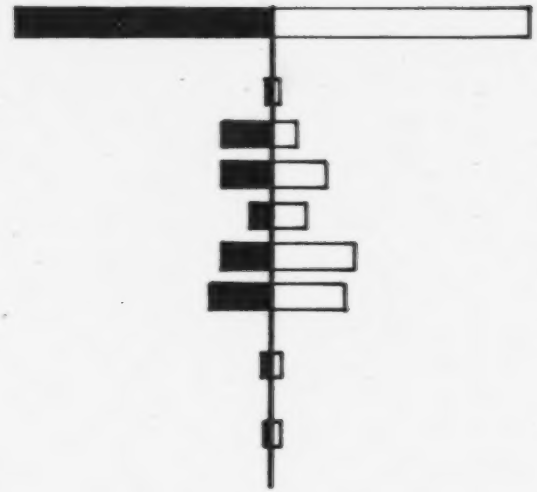
Total Male: 2159
Total Female: 2073

(Median Age 24.4)

YEARS OF SCHOOL COMPLETED BY

MONROE COUNTY NEGRO POPULATION—1970

	MALE		FEMALE
25 Years Old and Over	946		1042
No School Years Completed	19		23
1-4 Years Completed	179		96
5-7 Years Completed	178		194
8 Years Completed	89		123
9-11 Years Completed	191		292
12 Years Completed	234		266
1-3 College Years Completed	39		27
4 or more College Years Completed	17		31

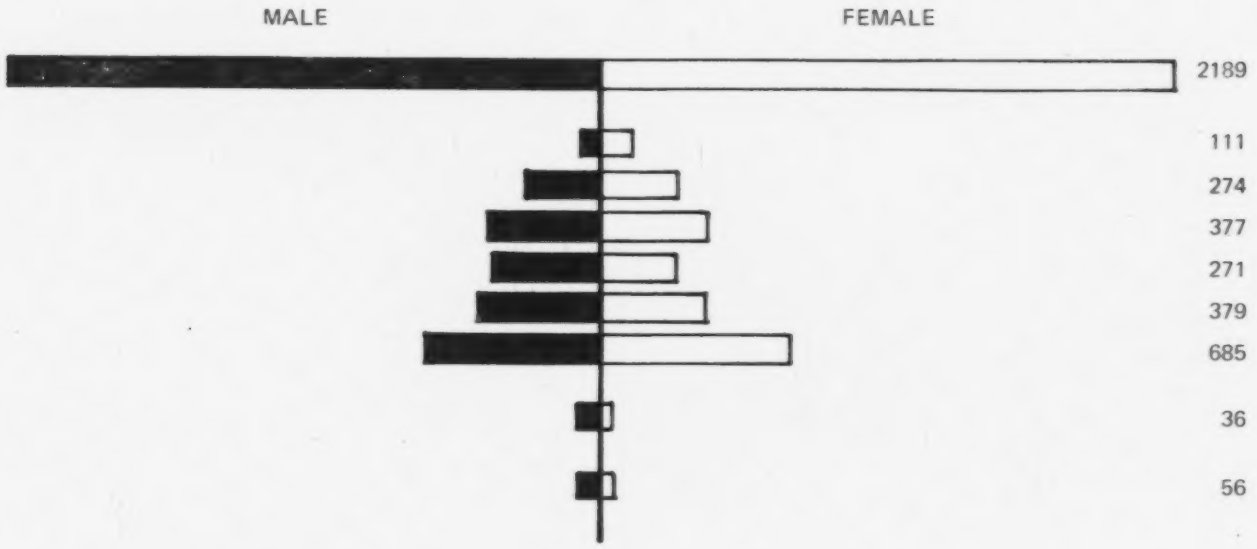


Median School Years Completed: 9.1
Percent High School Graduates: 30.7

Median School Years Completed: 9.9
Percent High School Graduates: 30.1

= 50

YEARS OF SCHOOL COMPLETED FOR
MONROE COUNTY PERSONS OF SPANISH LANGUAGE---1970



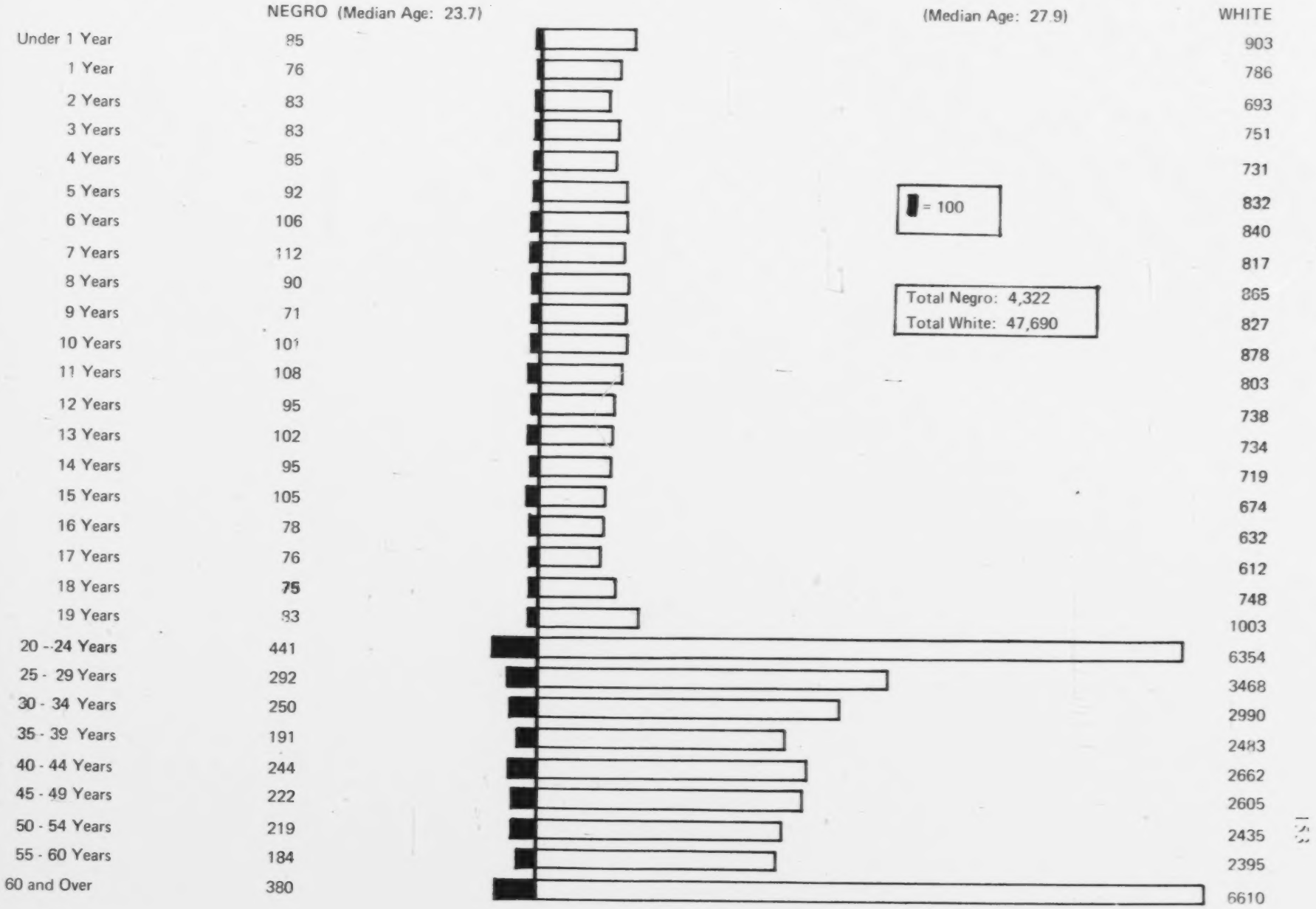
	MALE	FEMALE
25 Years Old and Over	2191	2189
No school years completed	74	111
1-4 years completed	262	274
5-7 years completed	365	377
8 years completed	346	271
9 - 11 years completed	399	379
12 years completed	581	685
1 - 3 college years completed	86	36
4 or more college years completed	78	56

Median School years completed: 9.4
Per cent High School Graduates: 34.4

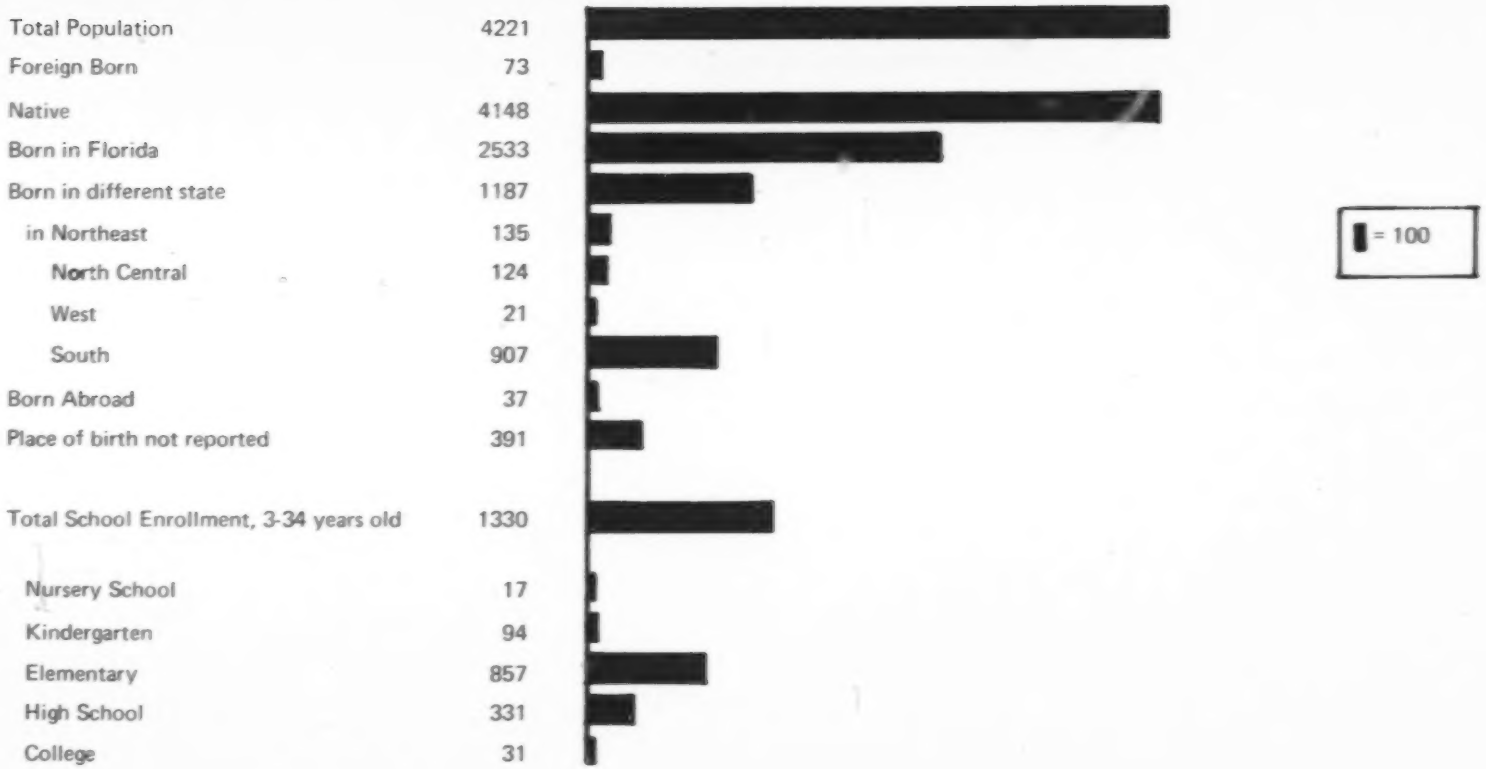
Median School years completed: 9 5
Per cent High School Graduates: 35.5

= 50

MONROE COUNTY POPULATION BY AGE AND RACE---1970



PLACE OF BIRTH AND SCHOOL ENROLLMENT OF
MONROE COUNTY NEGRO POPULATION--1970



CIVILIAN LABOR FORCE, BY EMPLOYMENT STATUS, MONROE COUNTY:
MARCH 1963, 1964, 1965, 1970, AND 1971

	1963	1964	1965	1970	1971
Total civilian labor force	12,650	14,100	14,900	17,780	17,320
Unemployment					
Total number unemployed	500	400	350	420	600
Unemployment rate (%)	4.0	2.8	2.3	2.4	3.5
Employment					
Total number employed	12,150	13,700	14,550	17,360	16,720
Nonagricultural					
Wage and salary	9,300	10,550	11,350	14,700	14,020
Self-employed & unpaid Family workers[a]	2,850	3,150	3,200	2,620	2,660
Agricultural[b]					
Wage & salary (Hired labor)	0	0	0	20	20
Self-employed & unpaid Family workers[a]	0	0	0	20	20

---

[a] Included also are domestic service workers in private households.

[b] Agricultural employed estimates exclude seasonal workers (those employed on farms less than 150 calendar days).

[c] 1960 Civilian Labor Force counts only 14 years and older.

Sources: State of Florida Department of Commerce, Division of Labor and Employment Opportunities, Office of Research and Planning, monthly reports, Florida Employment Statistics (for state estimates) and Labor Market Trends published for each of Florida's 10 most populous counties, and annual mimeographed releases entitled "Basic Labor Market Information" for each of the smaller counties.

GENERAL CHARACTERISTICS OF MANUFACTURING, MONROE COUNTY: 1967

	1967
Number of Establishments	
Total	40
With 20 or more employees	5
All employees[a]	
Number (1,000)	0.4
Payroll (mil. $)	2.0
Production workers	
Number (1,000)	0.3
Wages (mil. $)	1.1
Value Added by Manufacturer (mil. $)	4.9
Cost of Materials[b] (mil. $)	2.0
Value of Shipments[b] (mil. $)	6.9
New Capital Expenditures (mil. $)	0.4

---

[a]Includes employment and payroll at central administrative offices and auxiliary units.

[b]The value of shipments and cost of materials may include extensive duplications arising from shipments between establishments in the same industry classification.

Source: U.S. Department of Commerce, Bureau of the Census, 1967 Census of Manufacturers: Area Service, Florida.

MONROE COUNTY, FLORIDA, 1970

General Characteristics		Cape Sable Division	Key West Division	Lower Keys Division	Middle Keys Division	Upper Keys Division	Totals
POPULATION							
Total		154	27,563	12,101	5,756	7,012	52,586
Sex:	Male	93	14,486	7,090	2,954	3,558	28,181
	Female	61	13,077	5,011	2,802	3,454	24,405
Race:	White	153	23,918	11,555	5,364	6,700	47,690
	Negro	1	3,222	330	368	301	4,222
	Other	-	423	216	24	11	674
Age:	Median	30.5	25.4	23.4	41.7	44.8	27.3
	% under 18 years	20.1	31.4	31.7	26.0	24.2	29.9
	% 65 years and over	4.5	7.2	4.2	14.1	16.9	8.5
In group quarters		-	2,184	1,775	43	35	4,037
HOUSEHOLDS							
Total number		78	8,503	3,291	2,204	2,751	16,827
Total population		154	25,379	10,326	5,713	6,977	48,549
Persons per household		1.97	2.98	3.14	2.59	2.54	2.89
Negro and other races							
Number		1	1,046	90	107	89	1,332
Population		1	3,450	370	390	311	4,522
Persons per household		-	3.30	4.11	3.64	3.49	3.39

Source: U.S. Department of Commerce, Bureau of the Census, General Population Characteristics, Florida, PC(1)-B11 (Washington: Government Printing Office).

PERSONAL INCOME EARNED IN THE PRIVATE SECTOR, ON PLACE-OF-WORK BASIS, BY BROAD NONFARM INDUSTRIAL CLASSES

FOR MONROE COUNTY: 1969 AND 1970

	1969 ($000)	1970 ($000)
Total Private Nonfarm	56,131	61,555
Earnings from:		
Manufacturing	2,882	2,904
Mining	779	925
Contract construction	5,614	6,038
Transportation, communications, public utilities	4,618	5,174
Wholesale and retail trades	18,588	20,042
Finance, insurance, real estate	3,841	4,261
Services	17,918	20,266
Other private industry	1,891	1,945

Source: U.S. Department of Commerce, Office of Business Economics, Regional Economics Division, unpublished data.

NUMBER OF FAMILIES, BY INCOME LEVEL IN 1960 AND IN 1970, MONROE COUNTY, FLORIDA

	1970	1960
Number of Families	13,565	3,614
Number of Families Having Incomes		
$ 2,999 and less	1,976	997
$ 3,000 to $ 4,999	1,969	1,119
$ 5,000 to $ 6,999	2,495	752
$ 7,000 to $ 8,999	1,989	399
$ 9,000 to $14,000	3,458	n.a.
$15,000 and over	1,678	n.a.
$10,000 and over[a]	n.a.	347

Source: U.S. Department of Commerce, Bureau of the Census, 1970 Census of Population, General Social and Economic Characteristics: Florida, PC(1)-C11 Fla; U.S. Department of Commerce, Bureau of the Census, 1960 Census of Population, General Social and Economic Characteristics: Florida.

TOTAL PERSONAL INCOME, ON PLACE-OF-WORK BASIS
BY MAJOR SOURCE, FOR MONROE COUNTY, FLORIDA,
1969 AND 1970

	1969 ($000)	1970 ($000)
Total Personal Income	190,186	211,330
Major Source		
Wages and salaries	132,957	148,964
Other labor income	2,429	2,754
Proprietors income		
Total	11,225	11,399
Farm	124	104
Nonfarm	11,101	11,295
Property income	31,802	33,376
Transfer payments	15,975	19,515
Less contributions for Social Insurance	4,202	4,678

Source: U.S. Department of Commerce, Office of Business Economics Regional Economics Division, unpublished data.

PERSONAL INCOME EARNED ON PLACE-OF-WORK BASIS, IN THE FARM AND NONFARM SECTORS, FOR MONROE COUNTY, 1969 AND 1970

	1969	1970
Total earnings	146,611	163,117
Farm earnings	145	126
Nonfarm earnings	146,466	162,991
Government	90,335	101,436
Federal	75,699	84,153
Civilian	17,355	20,340
Military	58,344	63,813
State and Local	14,636	17,283
Private nonfarm earnings	56,131	61,555

Source: U.S. Department of Commerce, Office of Business Economics, Regional Economics Division, unpublished data.

PERSONAL INCOME PER CAPITA, ON PLACE-OF-RESIDENCE
FOR MONROE COUNTY, FLORIDA:
1929, 1950, 1959, 1962, AND 1965 TO 1970

	Monroe County
1929 dollars	406
1950 dollars	1,596
1959 dollars	1,983
1962 dollars	1,960
1965 dollars	2,484
1966 dollars	2,681
1967 dollars	3,146
1968[a] dollars	3,566
1969[a] dollars	3,614
1970[a] dollars	3,974

[a]Revised.

Source: U.S. Department of Commerce, Office of Business Economics, Regional Economics Division, unpublished data.

VALUE OF PROPERTY, BY TYPE, ON COUNTY TAX ASSESSMENT ROLLS, MONROE COUNTY, 1970

	1970
Assessed Value Non-Exempt Real estate (dollars)	292,818,100
Assessed Value Personal Property (dollars)	32,469,948
Assessed Value Railroad and Telegraph Property (dollars)	105,855
Total All Non-Exempt Property (Col. 1, 2, 3 dollars)	325,393,903
Total Value Homestead Exemptions (dollars)	33,545,300
Total Value for Interest and Sinking Funds (Col. 4 and 5 dollars)	358,939,203

Source: State of Florida Department of Revenue, State of Florida Ad Valorem Tax Data, 1970.

FAMILIES AND PERSONS HAVING INCOMES LESS THAN POVERTY LEVEL IN 1969, MONROE COUNTY: 1970

	1970
FAMILIES	
Number	1,904
Percent of all families	14.0
Mean family income ($)	1,636
Mean income deficit ($)	1,599
Percent receiving public assistance income	10.4
Mean size of family	3.38
Number with female head	590
PERSONS	
Number	8,019
Percent of all persons	16.5
Percent receiving social security income	13.2
Percent 65 years old and over	14.3

NOTE: In 1969, the poverty thresholds ranged from $1,487 for a female unrelated individual 65 years old and over living on a farm to $6,116 for a nonfarm family with a male head and with seven or more persons. The average poverty thresholds for a nonfarm family of four headed by a male was $3,745.

Source: U.S. Department of Commerce, Bureau of the Census, 1970 Census of Population, General Social and Economic Characteristics: Florida, PC(1)-C11 Fla.

PUBLIC LODGINGS AND FOOD SERVICE ESTABLISHMENTS, MONROE COUNTY: JULY 11, 1971

	Monroe County 1971
Total Lodging Units	7,190
Apartment Units	2,594
Hotel Units	338
Motel Units	3,678
Rooming House Units	580
Food Services Establishments[a]	307
Seating capacity	17,713

[a]In addition to food establishments operating under regular licenses, included are counter, take-out, curb, catering, mobile, and temporary establishments operating under special food services licenses.

Source: State of Florida Department of Business Regulation, Division of Hotels and Restaurants, Classified Totals, Public Lodging and Food Service Establishments, July 1, 1971.

MONROE COUNTY
VOCATIONAL-TECHNICAL SURVEY

Educational and Professional Systems, Inc.
in Cooperation with Monroe County School District
and Florida Keys Community College

QUESTIONNAIRE FOR EMPLOYERS

Date of Interview _____ Name of Interviewer _____

1. Category: Business_____
Professional _____
Industrial_____
Other_____

Group: Marine activities_____
Tourism_____
government_____
service_____
other_____

2. What is the primary business of your company?_____

3. Please list job titles of your employees (example: maid, L.P.N., mechanic, etc.)

4. Approximate maximum number of employees monthly_____.
Approximate minimum number of employees monthly_____.

5. Do you have (a)some_____ (b) much_____ (c) little_____ (d) no_____ difficulty in hiring qualified employees?

6. Do you have (a) some_____ (b) much_____ (c) little_____ (d) no_____ difficulty finding and retaining qualified employees?

7. The minimum educational attainment level required for the majority of your job positions is: Elementary_____ Secondary_____ College_____.

QUESTIONNAIRE FOR EMPLOYERS
PAGE 2

8. What specific job knowledge or skill does a person need to work for your company?

9. Does your company plan any expansion in the near future? Yes_____ No_____
If your answer is "no", why not?

10. Would you approve of the Monroe County High Schools and Jr. College expanding their programs to include vocational/technical programs which will prepare the students for job opportunities in Monroe County? Yes_____ No_____.

11. Please check the vocational/technical courses that could be offered by the Monroe County Schools and Florida Keys Community College that you feel will help meet the existing or future employment needs of Monroe County.

_____ Licensed Practical Nurse
_____ Nurses aid
_____ beautician
_____ typing
_____ shorthand
_____ filing
_____ dictation and transcription
_____ other: (Please list).

_____ welding
_____ drafting
_____ industrial tech
_____ distribution and marketing
_____ electronics
_____ shop process
_____ auto repair

12. Does your company conduct any educational program for your employees?
Yes _____ No_____

13. What do you consider to be the major or pre-job entry training needs of the majority of your job categories?

14. In your opinion, do you feel the Monroe County Schools and Florida Keys Community College are currently meeting the employment needs of Monroe County? Yes_____ No_____

15. If your answer to number 14 is "no", what recommendations do you have for the improvement of local educational programs?

QUESTIONNAIRE FOR EMPLOYERS
PAGE 3

16. To what extent do you feel the needs for potential Monroe County employees can be met by programs provided outside the Monroe County School system and the Florida Keys Community College? (Examples: community or business colleges, federally funded programs out of county, public vocational technical or job training programs.)

17. What are some of the most serious future employment problems you see for your company?

18. Have you ever hired anyone who had received vocational or technical training here in Monroe County? Yes_____ No_____

19. Were you satisfied with their training? Yes_____ No_____

20. If you were not completely satisfied with their training, how do you think it could have been improved?

21. If training relevant to your company's needs were available, would you encourage your employees to participate in it? Yes_____ No_____

22. Would you encourage your employees to the extent that you would give them some time off with pay in order to receive training? Yes_____ No_____

23. Are you a native of this area? Yes_____ No_____

24. Were you born here, or have you simply adopted it as your home?

25. How long have you lived here? _____

26. Do you feel as if you know the area, its problems and needs very well?
Yes_____ No_____

QUESTIONNAIRE FOR EMPLOYERS
PAGE 4

27. What do you feel to be the three most pressing problems of this area?

28. In order to solve these problems you have mentioned, what would you say are the area's three most important needs?

29. As far as vocational/technical training is concerned, would you recommend it more for those considered highly intelligent, those with only average intelligence, or those below normal in intelligence?

30. Do you think there is a great need for vocational/technical training in this area?
Yes_____ No_____

SUPPLEMENT - QUESTIONNAIRE FOR EMPLOYERS

OCCUPATIONAL EMPLOYMENT,1972

GENERAL INFORMATION

1. Total Employment----------

Enter the total number of persons on the payroll covered by this report who worked full-or part-time or received pay for any part of the period reported. Include salaried officers of corporations and executives and their staffs, but exclude proprietors, members of unincorporated firms, and unpaid family workers. Include persons on vacations and sick leave for which they received pay directly from your firm for the period reported but exclude persons on leave without company pay the entire period and pensioners and members of the Armed Forces carried on the rolls but not working during the period reported.

2. Nature of Business----------

(a) Describe the principal activity and the major product or service of the Reporting Unit (e.g., Manufacturing-women's shoes; Warehousing-steel products; Research lab-radio and T.V. receiver; and Retail trade-shoe store).

(b) Is the Reporting Unit primarily engaged in performing services for other units of your company? Yes _____ No _____

If "yes" please check the one block below that best describes the service being performed.

(1) _____ Central administrative office

(2) _____ Research, development, or testing

(3) _____ Storage (Warehouse)

(4) _____ Other (Specify, e.g., powerplant)_____

FACT SHEET

What Kind of Information Will This Survey Develop?

The Program will:

_____ develop accurate profiles of our county's worker-skill resources by industry and
_____ identify the location of our worker-skill resources
_____ permit reasonable projections of the county industry's future worker skill requirements nationally.

_____ identify new, emerging occupations and those that are disappearing.

Why is this information needed?

These data are basic to the development of manpower information needed by all levels of government to make decisions about the character of and amounts of expenditures for education and training programs, programs that must provide the right training at the right time.

Public and private educators, at the local level, need these data to evaluate the adequacy of their vocational and other education curricula and the relevancy of their vocational guidance programs.

Name of Interviewee _____

EMPLOYMENT BY OCCUPATION

	# of Employees			
	Present		Future	
	1 Total	2 Apprentice	3 Next Year	4 2-3 Years
SERVICE OCCUPATIONS				
Include those workers in occupations concerned with the performance of services for persons that require either direct contact or close association with the individual; occupations concerned with the protection of individuals or of public or private property; occupations concerned with preparing and serving food and beverages; and occupations related to the cleaning of the interior and equipment of buildings, offices, stores, and similar places.				
MAINTENANCE, CONSTRUCTION, REPAIR, AND POWER PLANT OCCUPATIONS				
Include all skilled, semiskilled, and unskilled workers performing machine and manual tasks involving maintenance, construction, repair, and powerplant operations. Include "apprentices" in the occupation to which they are apprenticed and report them in both columns (1) and(2)				
PRODUCTION (PLANT) OCCUPATIONS				
Include all skilled, semiskilled, and unskilled workers performing machine or manual tasks involving production and/or material movement operations. Exclude plant clerical occupation, but include foremen (non-working).				
Production and Processing Occupations				
Material Handling Workers				
Other Plant Workers				
MANAGERS AND OFFICERS				
Include persons concerned with managerial functions common to many types of organizations as well as occupations which require a knowledge of the management and operations of the given organization. Typical examples are: Coporate Officers; Plant Managers; Branch Managers; District Managers; Production Superintendents; General Superintendents; and Managers of such departments as budget, purchasing, sales and distribution, advertising, public relations, personnel and training, etc. Those persons reported in column (2) should also be reported in column (1).				
PROFESSIONAL OCCUPATIONS, SCIENTIFIC				
Include persons concerned with the theoretical or practical aspects of such fields as science, engineering, and technical work. Most of these occupations require substantial educational preparation, usually at the university level. Typical examples are: Architects; Engineers (Including Sales Engineers); Chemists;Metallurgists; Physicists; Mathematicians; Statisticians; Biologists; Economists. Those				

EMPLOYMENT BY OCCUPATION

Professional Occupations, Scientific , continued

persons reported in column (2) should also be reported in column (1).

	# of Employees			
	Present		Future	
	1 Total	2 Apprentice	3 Next Year	4 2-3 Years
PROFESSIONAL OCCUPATIONS, NONSCIENTIFIC Include persons concerned with the theoretical or practical aspects of such fields as art, education, medicine, law, and business relations. Most of these occupations require substantial education preparation, usually at the university level. Typical examples are: Accountants and Auditors; Purchasing Agents; Public Relations Men; Personnel and Training Specialists (other than departmental managers); Lawyers; Physicians and Surgeons; Registered Nurses; Editors and Writers.				
TECHNICIAN OCCUPATIONS Include all persons actually engaged in technical work utilizing theoretical knowledge of fundamental scientific, engineering, mathematical, computer programming, or draft design principles, comparable to those acquired through study at technical institutes, junior colleges or other formal post high school training less extensive than a 4-year college course, or through equivalent on-the-job training or experience. Those persons reported in column (2) should also be reported in column (1).				
SALES OCCUPATIONS				
CLERICAL OCCUPATIONS Include office and plant clerical personnel. Office clerical work involves preparing, transcribing, transferring, systematizing, and preserving communications and records; collating accounts; and distributing information. Typical examples are: Secretaries; Stenographers; Typists; File Clerks; Office Machine Operator; Bookkeepers; Cashiers; Messengers; Telephone Operators; etc. Plant clerical work involves planning, coordinating, or expediting of production and the flow of work; or the clerical aspects of receiving; storing, issuing, or shipping of materials, merchandise, supplies, or equipment.				

MONROE COUNTY
VOCATIONAL-TECHNICAL SURVEY

Educational and Professional Systems, Inc.
in Cooperation with Monroe County School District
and Florida Keys Community College

QUESTIONNAIRE FOR FORMER STUDENTS

Dear Former Student,

Your name has been suggested to us as a possible source of information about vocational-technical training in Monroe County. Since you once participated in a phase of such training, we of the Monroe County School District and the Florida Keys Community College would like to know the answers to the following questions. Please answer them and send them back to us in the enclosed self-addressed envelope as soon as possible. It is important that we hear from you within the next five days. Please give frank answers. Your name will not be used in this study.

1. In what year were you enrolled as a vocational-technical student? _____

2. Why did you take such training? _____
_____
_____.

3. Was it a satisfactory experience for you? _____

4. In what way was it satisfactory or not satisfactory? _____
_____
_____

5. Did your training help you to get a job? Yes _____ No _____

6. Why did it help or not help? _____
_____
_____

7. What types of training would you like to see Monroe County offer its residents?

_____ _____

_____ _____

8. Would you be interested in such training if it were offered? Yes _____ No _____

9. What kind of job do you have now? (What do you do?) _____
_____

10. Do you think vocational-technical training would help you in such a job?
Yes _____ No _____

11. Are you satisfied with your present job? Yes _____ No _____
If your answer is no please state why _____
_____

12. What kind of job would you like in 11? _____
The future ? _____

13. In your opinion, what are the three most important things Monore County needs in order to make it a truly great place to live? _____,
_____, _____

14. Do you think the school system or the community college can do anything to help develop some of these things you mentioned? Yes _____ No _____

15. Why do you think they can or cannot help? _____
_____

16. What specifically are some things you think they should do? _____
_____
_____
_____

Thank you very much.

MONROE COUNTY
VOCATIONAL-TECHNICAL SURVEY

Educational and Professional Systems, Inc.
in Cooperation with Monroe County School District
and Florida Keys Community College

QUESTIONNAIRE FOR LOCAL RESIDENTS

Date of Interview_____ Name of Interviewer_____

1. Interviewer: Observe race of respondent.

1.	Black	_____
2.	White	_____
3.	Spanish-American	_____
4.	Other	_____
1.	Male	_____
2.	Female	_____

2. Were you born in:

1.	Monroe County?	_____
2.	Another part of Florida ?	_____
3.	Another state?	_____
4.	Another Country?	_____

3. Do you consider yourself a native of Monroe County? Yes_____ No_____

4. Do you think of Monroe County as your home? Yes_____ No_____

5. How long have you lived at this address?

1.	Less than one year	_____
2.	One year to less than two years	_____
3.	Two years to less than three years	_____
4.	Three years to less than four years	_____
5.	Four years to less than five years	_____
6.	Five years to less than six years	_____
7.	Six years to less than seven years	_____
8.	Seven years or more	_____
9.	Don't know	_____

Monroe County Survey - Local Residents
Page 2

6. Did any household member receive a high school equivalency diploma?
Yes_____ No_____

7. Did any household member receive vocational-technical training?
Yes_____ No_____

8. If answer is "yes" what type of training?

9. Which household members are presently employed and how many jobs do they hold?

10. Of those householdmembers who are working or would like to be working, what occupation is each most qualified for? WRITE IN OCCUPATION IN SPACE. (ASK EACH ADULT PRESENT)

11. What is the present primary occupation of each household member who is employed? WHAT HE DOES---NOT WHERE HE WORKS. IF SAME AS QUESTION 10 WRITE "SAME".

12. How does each household member get to his present primary job ?

1. Own car _____
2. Car pool _____
3. Bus _____
4. Walk _____
5. Other _____

13. Please check the vocational - technical courses you would like to see offered in the Monroe County High Schools or Jr. College.

_____	L. P. N.	_____	Drafting
_____	Nurses Aid	_____	Shop process
_____	Beautician	_____	Industrial Tech.
_____	Typing	_____	Distribution & Marketing
_____	Shorthand	_____	Electronics
_____	Filing	_____	Welding
_____	Dictation and transcription	_____	Auto repair

_____etc.

14. Would you be interested in attending a "refresher" course in:

English	Yes_____	No_____
Reading	Yes_____	No_____
Arithmetic	Yes_____	No_____

15. Do you speak a language other than English? Yes_____ No_____

16. Have any household members who wish to work been without work for the entire past 4 weeks? Yes_____ No_____

17. If "yes", have they been without work because:

1. Can't find job
2. Disabled temporarily
3. Disabled totally
4. Sick
5. Laid off
6. Seasonal variation
7. Other

SPECIFY:_____

18. Is there any particular type of job each household member would like to have other than his present job?

Yes_____ No_____ Don't know_____

(If "no" skip question 29)

19. What type of job is that?

20. Thinking ahead, what kind of work do you think you will end up doing?

21. Are any household members still in school? Yes_____ No_____

22. If "yes", what kind: Kindergarten; Elementary;Jr. High; Senior High school; Junior college;4 year university; vocational school; graduate school; professional school. (Underline proper answer)

Monroe County Survey- Local Residents
Page 4

23. Public or Private school (Underline).

24. What are your opinions of the vocational-technical education program in your local school district? (Check one)

1.	Excellent	_____
2.	Good	_____
3.	Fair	_____
4.	Poor	_____
5.	Other	_____

25. If you have received vocational training, for what type of job were you trained?

26. Did that training help you get a job? Yes_____ No_____ Don't know_____

27. What additional training or education do you feel you need for a better opportunity? (WRITE IN)

28. What do you feel are the most important things to look for in a job?
1- Salary, 2 - Hours, 3 - Interest, 4 - Location, 5 - Conditions, 6 - Other.
(WRITE IN)

29. What types of jobs do you consider most <u>undesirable</u>? (WRITE IN)

30. Thinking about it now, do you feel that your present job training or education has held you back from other work opportunities? Yes_____ No_____

31. How interested would you be in a vocational-technical training program?
(UNDERLINE ONE) 1 - Very, 2 - Somewhat, 3 - Not, 4 - Don't know

32. How many hours a week could you spend in such a program?

33. Would you need child care facilities while attending the program? Yes_____ No_____

34. What time of day would be most convenient? Morning; Afternoon; Evening; Don't know; Doesn't matter. (Underline one)

35. What three or four things do you like best about living in this area?

36. As you see it, what are some of the important problems this neighborhood has right now?

37. I would like to ask about a few specific things in this neighborhood. How would you rate each item in this list for this neighborhood?

1. Excellent _____
2. Good _____
3. Fair _____
4. Poor _____
5. Don't know _____

A. The condition of the housing
B. The police protection
C. The public schools
D. The public transportation
E. Vocational Schools

38. Now, taking everything into account, are you satisfied or dissatisfied with this area as a place to live?
Satisfied_____ Dissatisfied_____ Don't know_____

39. Do you consider vocational-technical training in public schools to be a worthwhile undertaking? Yes_____ No_____

(If "No", Why?)

MONROE COUNTY
VOCATIONAL-TECHNICAL SURVEY

Educational and Professional Systems, Inc.
in Cooperation with Monroe County School District
and Florida Keys Community College

QUESTIONNAIRE FOR FACULTY AND ADMINISTRATORS

Dear Teacher or Administrator,

As you know a great emphasis today at all governmental levels is being placed on Vocational-Technical Training. From kindergarten through the community college, the "world of work" is becoming part of the curricula. This survey, conducted for the Monroe County School System and The Florida Keys Community College, is designed to ascertain two things: (1) how you, as an integral part of the educational system, feel about Vocational-Technical Training, and (2) what you consider to be the major needs of your community.

Your anonymity is guaranteed, so please feel free to be as candid as you wish. Please also return this form as soon as possible. It is important that we hear from you within the next five days.

1. Are you now teaching any vocational-technical courses? Yes_____ No_____

2. Have you ever taught any vocational-technical courses? Yes_____ No_____

3. Would you like to teach any vocational-technical courses? Yes_____ No_____

4. Are there any vocational-technical courses that you think ought to be taught in your academic area? Yes _____ No_____

5. If answer is "yes", what are some of these courses? _____
_____
_____

6. Who in general do you think should take these courses? (groups, not individuals)
_____
_____

7. In the area in which you live, what are some of the most pressing community problems? _____
_____
_____

Questionnaire For Faculty And Administrators
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8. In order to solve some of these problems, what are the most important needs? _____

_____

_____

9. Do you think the local school system or the community college can help solve some of these problems by fulfilling some of the needs? Yes_____ No_____ (If no, go to question #11.)

10. What specifically would you have the local school system or the community college do? _____

_____

_____

11. In your experience, are vocationally oriented students generally brighter, as bright, or not as bright as academically oriented students? (Underline your answer)

12. In your opinion, is vocationally-oriented education best for these students who can't seem to cope with the normal college preparatory courses? Yes_____ No_____

13. If you were trying to advise your child about whether he should be primarily involved in vocational education rather than in traditional college preparation, would his level of intelligence be a factor you would consider? Yes_____ No_____

14. Would your answer above remain the same if you were advising one of your students? Yes _____ No _____

15. In your professional duties, are you primarily a teacher or an administrator?

_____

16. Please list below any pertinent comments that you may have regarding vocational-technical education in Monroe County.

Thank you for your help.

(Please return this questionnaire to the office of the principal at your earliest convenience.)